THOMSON TX91G

MODEL

SERVICE MANUAL

DIFFERENCES BETWEEN BGHILL' , BGDKK', BG,L AND PAL I TX91G - Stereo

	NORM	PS BGHILL' (NTSC VIDEO)		*PS BGDKK' (NTSC VIDEO)		PS BG,L (N- VID)		PAL I (N-VID)
POS	TOCOM	DESCRIPTION	TOCOM	DESCRIPTION	TOCOM	DESCRIPTION	TOCOM	DESCRIPTION
CH01	13040160	CE 47U0F +20% 16.0V 85C	13082060	CE 10U0F +20% 50.0V 85C	13040160	CE 47U0F +20% 16.0V 85C	13082060	CE 10U0F +20% 50.0V 85C
CI10	15005190	CCCMIN 1N0F +-10% 50.0V	-	Deleted	15005190	CCCMIN 1N0F +10% -10% 50.0V	-	Deleted
CI11	15002130	CE 10U0F +20% 16.0V 85C	-	Deleted	15002130	CE 10U0F +20% 16.0V 85C	-	Deleted
CI12	13074930	CE 22U0F +20% 50.0V 85C	-	Deleted	13074930	CE 22U0F +20% 50.0V 85C	-	Deleted
CI13	15005300	CCCMIN 22N0F +80% -20% 25.0V	-	Deleted	15005300	CCCMIN 22N0F +80% -20% 25.0V	-	Deleted
CI35	-	Deleted	11054120	CCCFMAX 100N0F +-20% 50.0V	11054120	CCCFMAX 100N0F +-20% 50.0V	11054120	CCCFMAX 100N0F +-20% 50.0V
CI52	11063620	CCCFMAX 39P0F +-5% 50.0V NP0	-	Deleted	-	Deleted	-	Deleted
CI53	11063620	CCCFMAX 39P0F +-5% 50.0V NP0	-	Deleted	-	Deleted	-	Deleted
CI60	15005770	CCCMIN 4N7F +-20% 16.0V Y5R	-	Deleted	-	Deleted	-	Deleted
CI65	15005760	CCCMIN 47P0F +-5% 50.0V SL	-	Deleted	10113550	RCFMN 0 OHM +0% 100MI0W	-	Deleted
CI66	40432440	CCCFMAX 22P0F +-5% 50.0V NP0	-	Deleted	40432440		-	Deleted
CI67	15005530	CCCMIN 2P7F +-10% 50.0V NP0	-	Deleted	15005530		-	Deleted
CI68	15005530	CCCMIN 2P7F +-10% 50.0V NP0	-	Deleted	15005530		-	Deleted
DI50	16007610	D-TLP E7296(BA282) 35.0V	-	Deleted	-	Deleted	-	Deleted
DI51	16007610	D-TLP E7296(BA282) 35.0V	-	Deleted	67056701	STRAP 12.5 MM.	-	Deleted
DI52	16007610	D-TLP E7296(BA282) 35.0V	-	Deleted	-	Deleted	-	Deleted
DI60	16007610	D-TLP E7296(BA282) 35.0V	-	Deleted	-	Deleted	-	Deleted
DI62	70436540	D-SLP 1N4148 100.0V 150E-3A	-	Deleted	70436540	D-SLP 1N4148 100.0V 150E-3A	-	Deleted
II02	20165170	IC-LIN STV8225 1406 A0 00	-	Deleted	20165170	IC-LIN STV8225 1406 A0 00	-	Deleted
JI01	10113550	RCFMN 0 OHM +0% 100MI0W	-	Deleted	-	Deleted	-	Deleted
JI02	10113550	RCFMN 0 OHM +0% 100MI0W	-	Deleted	-	Deleted	-	Deleted
JI03	67056701	STRAP 12.5 MM.	-	Deleted	-	Deleted	-	Deleted
JI04	10113550	RCFMN 0 OHM +0% 100MI0W	-	Deleted	10113550	RCFMN 0 OHM +0% 100MI0W	-	Deleted
JI06	-	Deleted	-	Deleted	10113550	RCFMN 0 OHM +0% 100MI0W	-	Deleted
JI07	67056701	STRAP 12.5 MM.	-	Deleted	67056701	STRAP 12.5 MM.	-	Deleted
JI22	67056701	STRAP 12.5 MM.	-	Deleted	67056701	STRAP 12.5 MM.	-	Deleted
LI01	20610040	LA 7X7 32M4 HZ 100	-	Deleted	20610040	LA 7X7 32M4 HZ 100	-	Deleted
LI03	15040120	LF 3U9H +10% 1.6 OHM 200MI0A	15040180	LF 4U7H +10% 1.7 OHM	15040180	LF 4U7H +10% 1.7 OHM	13020600	LF 5U6H +10%
QI01	10085120	FILSW OFWG3965M 2104 A1	20232070	FILSW G3962M 2104 A2	20232070	FILSW G3962M	10085120	FILSW OFWG3965M 2104 A1
QI02	20400330	FILSW 33M9HZ LITHIUM	-	Deleted	20407040	FILSW L9362M	-	Deleted
QI31	20336160	FILCTRP 6M0 HZ 35DB 70KDHZ	20356510	FILCTRP 6M5 HZ	-	Deleted	20336160	FILCTRP 6M0 HZ 35DB 70KDHZ
QI34	20330170	FILCTRP 5M74 HZ 35DB 70KDHZ	20330170	FILCTRP 5M74 HZ 35DB 70KDHZ	20330170	FILCTRP 5M74 HZ 35DB 70KDHZ	-	Deleted
RH18	15033320	RCFMN 82K0 OHM +5% 100MI0W	-	Deleted	15033320	RCFMN 82K0 OHM +5% 100MI0W	-	Deleted
RI04	15032220	RCFMN 100R0 OHM +5% 100MI0W	15033190	RCFMN 68R0 OHM +5% 100MI0W	15032220	RCFMN 100R0 OHM +5% 100MI0W	15033190	RCFMN 68R0 OHM +5% 100MI0W
RI11	15032570	RCFMN 2K2R0 OHM +5% 100MI0W	-	Deleted	15031990	RCFMN 10K0 OHM +5% 100MI0W	-	Deleted
RI22	-	Deleted	15033090	RCFMN 5K6 OHM +5% 100MI0W	-	Deleted	15033090	RCFMN 5K6 OHM +5% 100MI0W
RI27	15033330	RCFMN 82R0 OHM +5% 100MI0W	15033330	RCFMN 82R0 OHM +5% 100MI0W	15031990	RCFMN 100R0 OHM +5% 100MI0W	15033330	RCFMN 82R0 OHM +5% 100MI0W
RI50	15033210	RCFMN 6K8 OHM +5% 100MI0W	-	Deleted	-	Deleted	-	Deleted
RI51	15006130	RCF 10K0 OHM +5% 250MI0W	-	Deleted	-	Deleted	-	Deleted
RI52	15031990	RCFMN 10K0 OHM +5% 100MI0W	-	Deleted	-	Deleted	-	Deleted
RI53	15032970	RCFMN 4K7 OHM +5% 100MI0W	-	Deleted	-	Deleted	-	Deleted
RI54	15032830	RCFMN 3K9 OHM +5% 100MI0W	-	Deleted	-	Deleted	-	Deleted
RI55	15032590	RCFMN 2K7 OHM +5% 100MI0W	-	Deleted	-	Deleted	-	Deleted
RI56	15032310	RCFMN 1K8 OHM +5% 100MI0W	-	Deleted	-	Deleted	-	Deleted
RI57	15031990	RCFMN 10K0 OHM +5% 100MI0W	-	Deleted	-	Deleted	-	Deleted
RI60	15032590	RCFMN 2K7 OHM +5% 100MI0W	-	Deleted	-	Deleted	-	Deleted
RI63	15032130	RCFMN 150K0 OHM +5% 100MI0W	-	Deleted	15032130	RCFMN 150K0 OHM +5% 100MI0W	-	Deleted
RI74	15033060	RCFMN 56K0 OHM +5% 100MI0W	10113550	RCFMN 0 OHM +0% 100MI0W	15033060	RCFMN 56K0 OHM +5% 100MI0W	10113550	RCFMN 0 OHM +0% 100MI0W
TI03	16007030	TR-SSD DTC144EK N	-	Deleted	-	Deleted	-	Deleted
TI04	16007030	TR-SSD DTC144EK N	-	Deleted	-	Deleted	-	Deleted
TI28	11070770	TR-SLPLF BC847B N 100E-3A 45V	-	Deleted	-	Deleted	-	Deleted
-	-	MAINS CORD (FTZ)		* MAINS CORD (NON-FTZ)		MAINS CORD (FTZ)		MAINS CORD (NON-FTZ)

* Note: FTZ power cord required for Quadra cabinet only.

DIFFERENCE BETWEEN SINGLE & DOUBLE SCART (STEREO)

POS.	S/SCART	D/SCART
BE01	SCART	21 WAY
BR01	DEL	3 WAY
RI30	27R	0R
RI31	75R	DEL
RV04	100R	12.5MM
RV05	75R	DEL
RV06	100R	12.5MM
RV07	75R	DEL
RV08	100R	12.5MM
RV09	75R	DEL
RV10	100R	12.5MM
RV11	75R	DEL
NF01	ASY TDA1771	ASY TDA1771 D/SCART
5040	DEL	ASY D/SCART
6000	DEL	3 WAY WIRE
6010	DEL	3 WAY WIRE
JR52	-	3.3uH
CI01	1N	390P
CI02	1N	390P
CI18	0R	150P
RI12	150P	-
RI13	150P	-
*CC01	0R	10N
*RC25	10N	33R

* FOR 10" TOWER MODEL ONLY

* TX91G (MONO) DIFFERENCES BETWEEN BGHILL`, BGDKK`, BG,L AND PAL I

POS.	TOCOM	BGHILL`	TOCOM	BGDKK`	TOCOM	BG,L	TOCOM	PAL I
CA07	15005750	CCCMIN 470P K 50V	15005590	CCCMIN 330P K 50V	15005750	CCCMIN 470P K 50V	15005590	CCCMIN 330P K 50V
CA09	15005620	CCCMIN 390P K 50V	15005590	CCCMIN 330P K 50V	15005620	CCCMIN 390P K 50V	15005590	CCCMIN 330P K 50V
CH01	13040160	CE 47U +20% 16V 85C	13082060	CE 10U +20% 50V 85C	13040160	CE 47U +20% 16V 85C	13082060	CE 10U +20% 50V 85C
CI10	15005190	CCCMIN 1N K 50V	-	DELETED	15005190	CCCMIN 1N K 50V	-	DELETED
CI11	15002130	CE 10U +20% 16V 85C	-	DELETED	15002130	CE 10U +20% 16V 85C	-	DELETED
CI12	15002560	CE 22U +20% 16V 85C	-	DELETED	15002560	CE 22U +20% 16V 85C	-	DELETED
CI13	15005300	CCCMIN 22N +80% -20% 25V	-	DELETED	15005300	CCCMIN 22N +80% -20% 25V	-	DELETED
CI14	15002130	CE 10U +20% 16V 85C	-	DELETED	15002130	CE 10U +20% 16V 85C	-	DELETED
CI15	15002130	CE 10U +20% 16V 85C	-	DELETED	15002130	CE 10U +20% 16V 85C	-	DELETED
CI31	15005760	CCCMIN 47P K 50V	15005630	CCCMIN 39P K 50V	15005760	CCCMIN 47P K 50V	15005760	CCCMIN 47P K 50V
CI35	-	-	11054120	CCCFMAX 100N	11054120	CCCFMAX 100N	11054120	CCCFMAX 100N
CI36	15005300	CCCMIN 22N +80% -20% 25V	15005300	CCCMIN 22N +80% -20% 25V	-	DELETED	-	DELETED
CI37	15005300	CCCMIN 22N +80% -20% 25V	15005300	CCCMIN 22N +80% -20% 25V	-	DELETED	-	DELETED
CI38	15005190	CCCMIN 1N K 50V	15005300	CCCMIN 22N +80% -20% 25V	-	DELETED	-	DELETED
CI52	11063620	CCCFMAX 39P J 50V	-	DELETED	-	DELETED	-	DELETED
CI53	11063620	CCCFMAX 39P J 50V	-	DELETED	-	DELETED	-	DELETED
CI60	15005770	CCCMIN 4N7 K 16V	-	DELETED	-	DELETED	-	DELETED
CI64	-	DELETED	15005770	CCCMIN 4N7 +20% -20% 16V	-	DELETED	-	DELETED
CI65	15005760	CCCMIN 47P J 50V	15005760	CCCMIN 47P J 50V	10113550	RCFMN 0R +0% 100MI0W	-	DELETED
CI66	40432440	CCCFMAX 22P J 50V	11063620	CCCFMAX 39P J 50V	15005150	CCCMIN 10P J 50V	-	DELETED
CI67	15005530	CCCMIN 2P7 K 50V	15005840	CCCMIN 8P6 K 50V	15005530	CCCMIN 2P7 K 50V	-	DELETED
CI68	15005530	CCCMIN 2P7 K 50V	15005840	CCCMIN 8P6 K 50V	15005530	CCCMIN 2P7 K 50V	-	DELETED
CR23	15005190	CCCMIN 1N K 50V	15005190	CCCMIN 1N K 50V	-	DELETED	-	DELETED
DI03	16007610	D-TLP E7296(BA282) 35V	16007610	D-TLP E7296(BA282)35V	-	DELETED	67056701	STRAP 0.6MM 4.5MM 12.5MM
DI04	16007610	D-TLP E7296(BA282) 35V	16007610	D-TLP E7296 (BA282) 35V	67056701	STRAP 0.6MM 4.5MM 12.5M	-	DELETED
DI50	16007610	D-TLP E7296(BA282) 35V	-	DELETED	-	DELETED	-	DELETED
DI51	16007610	D-TLP E7296(BA282) 35V	-	DELETED	67056701	STRAP 0.6MM 4.5MM 12.5M	-	DELETED
DI52	16007610	D-TLP E7296(BA282) 35V	-	DELETED	-	DELETED	-	DELETED
DI60	16007610	D-TLP E7296(BA282) 35V	16007610	D-TLP E7296(BA282) 35V	-	DELETED	-	DELETED
DI62	70436540	D-SLP 1N4148 100V 150E-3A	-	DELETED	70436540	D-SLP 1N4148 100V 150E-3A	-	DELETED
II02	20165170	IC-LIN STV8225 1406 A0	-	DELETED	20165170	IC-LIN STV8225 1406 A0	-	DELETED
JA12	-	DELETED	67056601	STRAP 0.6MM 4.5MM 10MM	-	DELETED	-	DELETED
JI01	10113550	RCFMN 0R +0% 100MI0W	-	DELETED	-	DELETED	-	DELETED
JI02	10113550	RCFMN 0R +0% 100MI0W	-	DELETED	-	DELETED	-	DELETED
JI03	67056701	STRAP 0.6MM 4.5MM 12.5MM 100MI0W	-	DELETED	-	DELETED	-	DELETED
JI04	10113550	RCFMN 0R +0% 100MI0W	-	DELETED	10113550	RCFMN 0R +0% 100MI0W	-	DELETED
JI06	-	DELETED	-	DELETED	10113550	RCFMN 0R +0% 100MI0W	-	DELETED
JI07	67056601	STRAP 0.6MM 4.5MM 10MM	-	DELETED	67056601	STRAP 0.6MM 4.5MM 10MM	-	DELETED
JI12	67056701	STRAP 0.6MM 4.5MM 12.5MM	67056701	STRAP 0.6MM 4.5MM 12.5MM	-	DELETED	-	DELETED
JI13	67056701	STRAP 0.6MM 4.5MM 12.5MM	67056701	STRAP 0.6MM 4.5MM 12.5MM	-	DELETED	-	DELETED
JI22	67056601	STRAP 0.6MM 4.5MM 10MM	-	DELETED	67056601	STRAP 0.6MM 4.5MM 10MM	-	DELETED
JI24	-	DELETED	10113550	RCFMN 0R +0% 100MI0W	-	DELETED	10113550	RCFMN 0R +0% 100MI0W
JI25	-	DELETED	10113550	RCFMN 0R +0% 100MI0W	-	DELETED	10113550	RCFMN 0R +0% 100MI0W
JI36	-	DELETED	10113550	RCFMN 0R +0% 100MI0W	-	DELETED	10113550	RCFMN 0R +0% 100MI0W

JI37	-	DELETED	10113550	RCFMN 0R +0% 100MI0W	-	DELETED	10113550	RCFMN 0R +0% 100MI0W
JR10	-	DELETED	67057101	STRAP 0.6MM 4.5MM 17.5MM	-	DELETED	-	DELETED
JR31	10113550	RCFMN 0R +0% 100MI0W	10113550	RCFMN 0R +0% 100MI0W	-	DELETED	-	DELETED
JR35	-	DELETED	10113550	RCFMN 0R +0% 100MI0W	-	DELETED	-	DELETED
JR47	67050601	TRAP 0.6MM 4.5MM 10MM	67050601	TRAP 0.6MM 4.5MM 10MM	-	DELETED	-	DELETED
LI01	20610040	LA 7X7 32M4 HZ 100	20302370	LA 7X7 28M05 HZ 2602 A0	20610040	LA 7X7 32M4 HZ 100	-	DELETED
LI03	15040100	LF 4U7H +10%	13020600	LF 5U6 +10%	15040180	LF 4U7H +10%	15040180	LF 4U7H +10%
QI01	10247070	FILSW OFWG 1967M 2104 A1	20256010	FILSW K2955M 2104 A1	20013100	FILSW OFWG 1960	20232080	FILSWJ1952
QI02	20400330	FILSW 33M9HZ LITHIUM NIOBATE	-	DELETED	20407040	L3062M	-	DELETED
QI31	20336100	FILCTRP 6M HZ 35DB 70KDHZ	20350510	FILTRP 6M5 HZ 35DB 70K HZ	-	DELETED	20336100	FILCTRP 6M HZ 35DB 70KDHZ
QI32	20336430	FILC 5M5 HZ 600R 50K HZ	20336430	FILC 5M5 HZ 600R 50K HZ	20336430	FILC 5M5 HZ 600R 50K HZ	-	DELETED
QI33	20336150	FILC 6M HZ 470R 50K HZ	20350470	FILC 6M5 HZ 470R 50K HZ	-	DELETED	20336150	FILC 6M HZ 470R 50K HZ
QI34	20330170	FILCTRP 5M74 HZ 30DB 70K HZ	20330170	FILCTRP 5M74 HZ 30DB 70K HZ	20330170	FILCTRP 5M74 HZ 30DB 70K HZ	-	DELETED
RI18	15033320	RCFMN 82K 0R +5% 100MI0W	-	DELETED	15033320	RCFMN 82K 0R +5% 100MI0W	-	DELETED
RI04	15032220	RCFMN 100R +5% 100MI0W	15033100	RCFMN 68R +5% 100MI0W	15032220	RCFMN 100R +5% 100MI0W	15033190	RCFMN 68R +5% 100MI0W
RI11	15032570	RCFMN 2K2 +5% 100MI0W	-	DELETED	15031900	RCFMN 10K +5% 100MI0W	-	DELETED
RI22	-	DELETED	15033000	RCFMN 5K6 +5% 100MI0	-	DELETED	15033000	RCFMN 5K6 +5% 100MI0
RI27	15031000	RCFMN 100R +5% 100MI0W	15033330	RCFMN 82R +5% 100MI0W	15031000	RCFMN 100R +5% 100MI0W	15033330	RCFMN 82R +5% 100MI0W
RI32	15032250	RCFMN 1K +5% 100MI0W	15032250	RCFMN 1K +5% 100MI0W	15031990	RCFMN 10K +5% 100MI0W	15031990	RCFMN 10K +5% 100MI0W
RI33	15032310	RCFMN 1K8 +5% 100MI0W	15032310	RCFMN 1K8 +5% 100MI0W	-	DELETED	-	DELETED
RI35	15032070	RCFMN 4K7 +5% 100MI0W	15032070	RCFMN 4K7 +5% 100MI0W	-	DELETED	-	DELETED
RI38	15032310	RCFMN 1K8 5% 100MI0W	15032310	RCFMN 1K8 5% 100MI0W	-	DELETED	-	DELETED
RI47	15032070	RCFMN 4K7 +5% 100MI0W	15032070	RCFMN 4K7 +5% 100MI0W	-	DELETED	-	DELETED
RI50	15033210	RCFMN 6K8 +5% 100MI0W	-	DELETED	-	DELETED	-	DELETED
RI51	15006130	RCF 10K +5% 250MI0W	-	DELETED	-	DELETED	-	DELETED
RI52	15031990	RCFMN 10K +5% 100MI0W	-	DELETED	-	DELETED	-	DELETED
RI53	15032070	RCFMN 4K7 +5% 100MI0W	-	DELETED	-	DELETED	-	DELETED
RI54	15032830	RCFMN 3K9 +5% 100MI0W	-	DELETED	-	DELETED	-	DELETED
RI55	15032590	RCFMN 2K7 +5% 100MI0W	-	DELETED	-	DELETED	-	DELETED
RI56	15032310	RCFMN 1K8 +5% 100MI0W	-	DELETED	-	DELETED	-	DELETED
RI57	15031990	RCFMN 10K +5% 100MI0W	-	DELETED	-	DELETED	-	DELETED
RI60	15032590	RCFMN 2K7 +5% 100MI0W	10113550	RCFMN 0R +0% 100MI0W	-	DELETED	-	DELETED
RI62	-	DELETED	15032590	RCFMN 2K7 +5% 100MI0W	-	DELETED	-	DELETED
RI63	15032130	RCFMN 150K +5% 100MI0W	`15032130	RCFMN 150K +5% 100MI0W	15032130	RCFMN 150K +5% 100MI0W	-	DELETED
RI70	-	DELETED	15032590	RCFMN 2K7 +5% 100MI0W	-	DELETED	-	DELETED
RI71	-	DELETED	15032590	RCFMN 2K7 +5% 100MI0W	-	DELETED	-	DELETED
RI72	-	DELETED	15032830	RCFMN 3K9 +5% 100MI0W	-	DELETED	-	DELETED
RI74	15033060	RCFMN 56K +5% 100MI0W	10113550	RCFMN 0R +0% 100MI0W	15033060	RCFMN 56K +5% 100MI0W	10113550	RCFMN 0R +0% 100MI0W
RR20	15006100	RCF 100R +5% 250MI0W	15006100	RCF 100R +5% 250MI0W	-	DELETED	-	DELETED
TI02	-	DELETED	10006290	TR-SLPLF BC858B N 100MI0A 30V	-	DELETED	-	DELETED
TI03	16007030	TR-SSD DTC144EK N	-	DELETED	-	DELETED	-	DELETED
TI04	16007030	TR-SSD DTC144EK N	-	DELETED	-	DELETED	-	DELETED
TI28	10006290	TR-SLPLF BC848B N 100MI0W	-	DELETED	-	DELETED	-	DELETED
TI30	16007030	TR-SSD DTC144EK N	16007030	TR-SSD DTC144EKN	16007030	TR-SSD DTC144EKN	-	DELETED

THE DIFFERENCES BETWEEN MAIN PB ATTACHED KEYBOARD AND DETACHED KEYBOARD ARE AS FOLLOWS:

	MAIN PCB WITH ATTACHED KEYBOARD		ASY MAIN PB DETACHED KEYBOARD	
POS.	TOCOM	STRUCTURED NAME	TOCOM	STRUCTURED NAME
A900	25 22 60 70	PCB TX91G MAIN-IC VERSION	25 22 60 70	PCB TX91G MAIN-IC VERSION
BP01	10 45 10 70	PIN-SOLDER 1.3MM 6MM 3075 A0	-	DELETED
BP01	10 23 81 10	RAW CONNECTOR HOUSING	-	DELETED
BP03	-	DELETED	10 45 10 70	PIN-SOLDER 1.3MM 6MM 3075 A0
BP03	-	DELETED	10 23 81 10	RAW CONNECTOR HOUSING
BR02	-	DELETED	80 44 00 00	CONN 2.5MM 12MA ST NAT 00
CK03	13 07 04 70	CE 4U7 +20% 16V 85C	-	DELETED
CR19	-	DELETED	15 00 53 00	CCCMIN 220P K 50V
CR20	-	DELETED	15 00 53 00	CCCMIN 220P K 50V
CR21	-	DELETED	15 00 53 00	CCCMIN 220P K 50V
CR22	-	DELETED	15 00 53 00	CCCMIN 220P K 50V
DK01	10 01 04 30	D-LEM MV5401A RED/GN	-	DELETED
DK01	40 48 05 50	HOLDER LED (MD/SD/PD)	-	DELETED
DK07	50 00 06 50	D-ZENER BZX55C6V8 6.8V 500MI0W	-	DELETED
DK08	70 43 65 40	D-SLP 1N4148 100V 150E-3A	-	DELETED
IK01	10 13 24 10	IC-SP TFMK1338T PHOTO-MODULE 2737 A0	-	DELETED
JK01	67 05 67 01	STRAP 0.6MM 4.5MM 12.5MM 1035 A0	-	DELETED
JK04	67 05 67 01	STRAP 0.6MM 4.5MM 12.5MM 1035 A0	-	DELETED
JK07	67 05 70 01	STRAP 0.6MM 4.5MM 15MM 1035 A0	-	DELETED
JK09	67 05 70 01	STRAP 0.6MM 4.5MM 15MM 1035 A0	-	DELETED
JK11	67 05 70 01	STRAP 0.6MM 4.5MM 15MM 1035 A0	-	DELETED
JK12	67 05 70 01	STRAP 0.6MM 4.5MM 15MM 1035 A0	-	DELETED
JK13	67 05 70 01	STRAP 0.6MM 4.5MM 15MM 1035 A0	-	DELETED
JK22	-	DELETED	67 05 67 01	STRAP 0.6MM 4.5MM 12.5MM 1035 A0
RK11	15 00 72 60	RCF 220R +5% 250MI0W	-	DELETED
RR44	-	DELETED	15 63 29 30	RCFMN 470R +5% 100MI0W +500PPM
RR45	-	DELETED	15 63 29 30	RCFMN 470R +5% 100MI0W +500PPM
LR02	67 05 67 01	STRAP 0.6MM 4.5MM 12.5MM	15 04 03 30	LF 6U8H +10%
LR05	67 05 67 01	STRAP 0.6MM 4.5MM 12.5MM	15 04 03 40	LF 6U8H +10%
SK01	10 45 33 70	DUAL TACT SWITCH	-	DELETED
SK02	-	DELETED	-	DELETED
SK03	10 45 33 70	DUAL TACT SWITCH	-	DELETED
SK04	-	DELETED	-	DELETED
SP05	20 61 23 90	SWITCH-MAIN PUSH 250V 4A 2T 2P MSB4001 3064 A1	-	DELETED

*@ OPTION

DF21	10"-14" TO USE ZPD15V, 17"-21" TO USE ZPD20V
RI17/LI04	FOR STEREO BOARD
LV07	FOR CINCH BOARD ONLY
RF23	FOR 10" MODEL WITH DC/DC ONLY.
BR09 BR05 BR03	INSERT FOR CLK/RADIO OPTION
BA04/JA05	WITH BA04 DELETED JA05
JR50 JA25 TA05 DA05 CA14 CA08	DELETED WITH CLK/RADIO OPTION
BR01	OPTION FOR DOUBLE SCART
BR08	OPTION FOR PSN LED INDICATOR.
RR69	INSERT 1K FOR CLK/RADIO OPTION.
RR72	INSERTED 1K FOR CLK/RADIO OPTION.
LED-RED	ADD JK21
LED-BI COLOUR	ADD DK07, DK08, JK01, JK20, RK17, RK18, RK15, RK16 DELETED JK21.
LR02 LR05 RR44 RR45 CR19 CR20 CR21 CR22	FOR DETACHED KEYBOARD ONLY.
RA37	1K5 (FOR MONO WITH HEADPHONE ONLY) 1K (FOR MONO WITHOUT HEADPHONE ONLY)
RF07	14", 17"TO USE 18K, 20", 21" TO USE 15K
DL00 JV08 CC21 JR07 CF01 CH17 RR01 RR14 CK04 BR06 BR07 RR08 RR00 CR01 CT08 CT06 CT76 CV08 DA01 JA02 NF02 RA20 RC23 RT58 CF72 CR13 RK19 CA22 DR06 RF34 RF31 TF31 RF32 RF33 RF35 TK01 CI08 RV45 RP63 RP60 DP61 DP60 CP60 RP61 RP64 BP50 JV08 CH17	TO BE DEFINE.
JK22	FOR DETACHED KEYBOARD ONLY (TTA)
CR72 CR71 RR71	FOR DOUBLE SCART ONLY
WITH BURST MODE	ADDED DP45 RP45 CP45 RP46 RP30 RP47 DP48 TP45 DP46.
WITH SMART PLUG	ADD BR10 RR07 RR08 CR02 CR03 RR06 RR05 RR03 RR04 RR09 DELETE D RR29.
WITHOUT SMART PLUG	ADD RR29 DELETED RR04 RR09 BR10 RR07 RR08 CR02 CR03 RR06 RR0 5 RR03.
IR01	FM 20 FOR MONO FS 20 FOR STEREO

LED INFORMATIONS FOR TX91G PRODUCTS

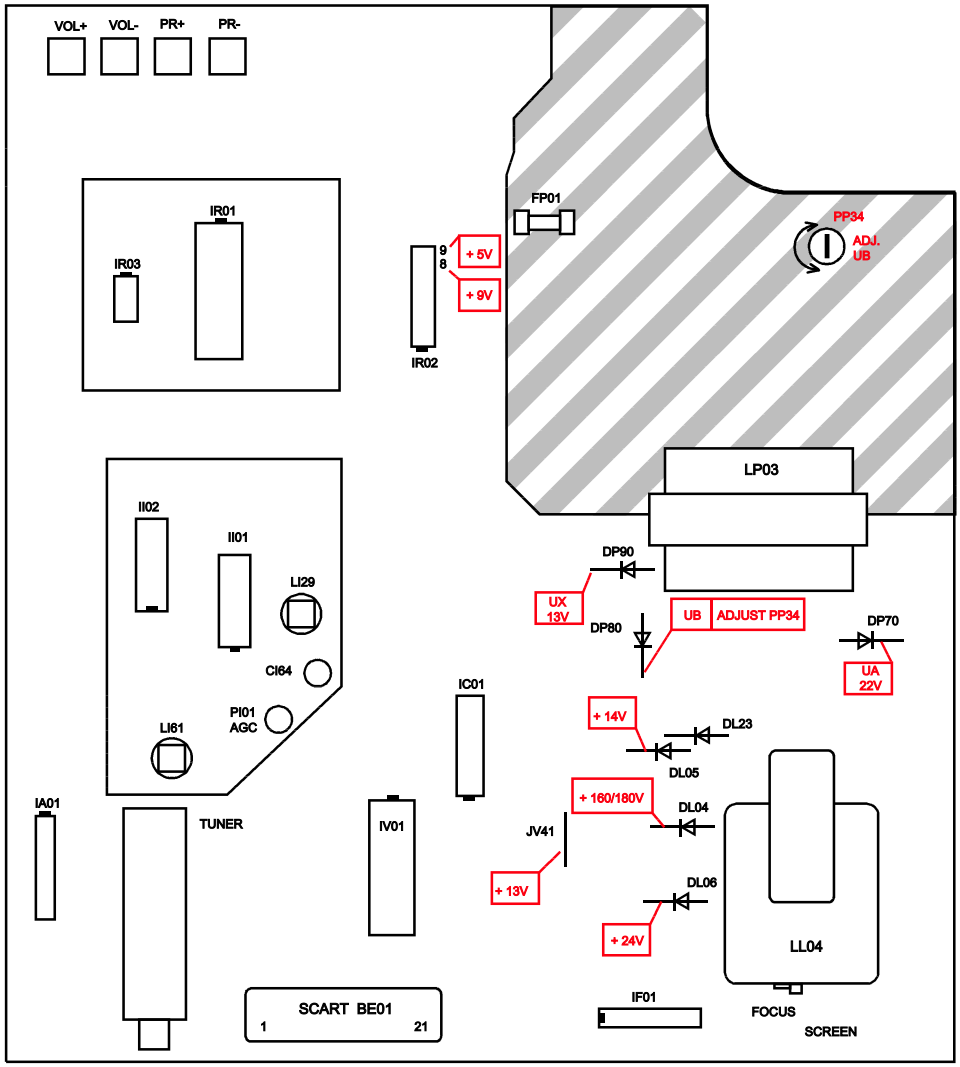
PROJECT	NOS.	161	364	373	383	405	409	409Z	612N	626	14" QUADRA	20" QUADRA	123	124R	220R	229Z	340R	372	383Z	618	21" QUADRA
RR70 LED BRIGHTNESS	RCF180R			X	X					X	X	X		X				X			X
LED SUPPORT (MK01)	T#20 12 58 7A				X					X	X	X									
	T#20 36 20 60			X																	
	T#25 07 01 10																				
	T#40 48 05 50																				
LED POSITION	DK01				X					X		X									
	DK02										X										
	DK03			X																	
	EXTERNAL													X				X			X
KEYBOARD	ATTACHED												DETACHED								

TX91G-COMPONENTS MATCHING FOR DST(SAMSUNG OR OREGA)ACCORDING TO SCREEN SIZE (14" TO 21")

SCREEN SIZE	14"(TTT)	14"(TTT)	14"(TTT)	14"(TTT)	14"(TTA)	17"(TTA)	17"(TTA)	20"(TTT)	20"(TTA)
TUBE TUBE REF. TOCOM	THAI-CRT A34JXV70X(TUBEBARE) 20 33 03 50	CHUNG HWA 370KRB22-TC30 11 00 60 33(NT)	CHUNG HWA 370KRB22-TC30 11 00 60 33(NT)	POLKOLOR A34EFU13X01 20 30 44 00 A34EFU33X01 20 67 03 30	POLKOLOR A34EFU13X01 20 30 44 00 A34EFU33X01 20 67 03 30	PHILIPS A41EAM40X01 10 14 00 30	PHILIPS A41EAM40X01 10 14 00 30	POLKOLOR A48EEV13X01 20 25 30 30	POLKOLOR A48EEV13X01 20 25 30 30
LL05(FBT) TOCOM	FCV-1410-E18 20 20 28 00	FCV-1410-E18 20 20 28 00	OREGA DST(L27)* 20303270(203032H0) 20452970(204529H0_P1) 20453060(95603-08)	FCV-1410-E18 20 20 28 00	OREGA DST(L27) PHI/MUR FOCUS BLK 20 60 83 50	FCV-1410-E18 20 20 28 00	OREGA DST(L27) 20 58 29 00 ASSEMBLE STRIPPED END	FCV-2010E07 20 32 63 00	OREGA DST(L28)* L28 PHI /MUR FOCUS 20 60 63 60
ML03 TOCOM	FBT CLIP 40 26 17 0B	FBT CLIP 40 26 17 0B	FBT CLIP 20 46 55 4A	FBT CLIP 40 26 17 0B	FBT CLIP 40 26 17 0B	FBT CLIP 40 26 17 0B	FBT CLIP 40 26 17 0B	FBT CLIP 40 26 17 0B	FBT CLIP 40 26 17 0B
ML05 TOCOM	-	-	RUBBER STUB 20 06 97 30	-	-	-	-	-	-
LL03(LIN. COIL) TOCOM	LL 90uH 30 90 90 08	LL 90uH 30 90 90 06	LL 90uH 30 90 90 06	LL 50uH 80 36 75 00	LL 50uH 80 36 75 00	LL 112uH 90 23 80 00	LL 112uH 90 23 80 00	LL 50uH 80 36 75 00	LL 50uH 80 36 75 00
CL04(TUN.CAP) TOCOM	CFS 6N5 1K6V 11 03 07 32	CFS 7N 1K5V 43 32 67 00	CFS 7N 1K5V 43 32 67 00	CFS 6N8 1K6V 80 30 47 00	CFS 6N5 1K6V 11 03 07 32	CFS 6N5 1K6V 11 03 07 32	CFS 6N5 1K6V 11 03 07 32	CFS 7N 1K5V 43 32 67 00	CFS 6N2 1K6V 60 06 22 00
CL18 TOCOM	-	CC 270P 2KV K 14 03 60 00	CC 270P 2KV K 14 03 60 00	CC 100P 2KV 14 00 63 10	CC 470P 3KV 14 00 60 50	CC 220P 2KV 14 03 62 90	CC 220P 2KV 14 03 62 90	-	-
CL05(S.CAP) TOCOM	CFS 390N 250V 20 05 31 00	CFS 390N 250V 20 05 31 00	CFS 390N 250V 20 05 31 00	CFS 390N 250V 20 05 31 00	CFS 390N 250V 20 05 31 00	CFS 390N 250V 20 05 31 00	CFS 390N 250V 20 05 31 00	CFS 470N 250V 43 04 43 00	CFS 470N 250V 43 04 43 00
RL00 TOCOM	RW 6R2 K 7W 70 43 26 30	RW 6R2 K 7W 70 43 26 30	RW 6R2 K 7W 70 43 26 30	RW 6R2 K 7W 70 43 26 30	RW 6R2 K 7W 70 43 26 30	RW 10R K 5W 20 52 55 00	RW 10R K 5W 20 52 55 00	RW 6R2 K 7W 70 43 26 30	RW 6R2 K 7W 70 43 26 30
RL22 TOCOM	RMF 91K 0.7W 1% 20 07 31 00	RMF 82K5 0.7W 1% 10 22 49 20	RMF 82K5 0.7W 1% 10 22 49 20	RMF 75K 0.7W 1% 10224020	RMF 75K 0.7W 1% 10 22 46 20	RMF 75K 0.7W 1% 10 22 46 20	RMF 75K 0.7W 1% 10 22 46 20	RMF 75K 0.7W 1% 10 22 46 20	RMF 75K 0.7W 1% 10 22 46 20
RL12 TOCOM	RCFF 0.56R 0.5W J 20 32 23 30	RCFF 0.56R 0.5W J 20 32 23 30	RCFF 0.56R 0.5W J 20 32 23 30	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 1R5 0.5W J 13 00 03 00	RCFF 1R5 0.5W J 13 00 03 00	RCFF 0.56R 0.5W J 20 32 23 30	RCFF 0.56R 0.5W J 20 32 23 30
RL13 TOCOM	RCFF 0.56R 0.5W J 20 32 23 30	RCFF 0.56R 0.5W J 20 32 23 30	RCFF 0.56R 0.5W J 20 32 23 30	RCFF 1R 0.5W J 15 05 02 70	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.56R 0.5W J 20 32 23 30	RCFF 0.56R 0.5W J 20 32 23 30	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00
RL14/JL12 TOCOM	RCFF 1R5 0.5W J 15 05 03 10	RCFF 1R5 0.5W J 15 05 03 10	STRAP 5MM 67 05 68 01	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00
RF09 TOCOM	RMF 100K 0.25W 1% 50 08 38 10	RMF 100K 0.25W 1% 50 08 38 10	RMF 100K 0.25W 1% 50 08 38 10	RMF 100K 0.25W 1% 50 08 38 10	RMF 100K 0.25W 1% 50 08 38 10	RMF 121K 0.25W 1% 30 94 05 20	RMF 121K 0.25W 1% 30 94 05 20	RMF 121K 0.25W 1% 30 94 05 20	RMF 121K 0.25W 1% 30 94 05 20
CRT(INTEGRATED PCB) MAIN PCB(A900)	7 TR CRT VERSION 20 57 06 70	7 TR CRT VERSION 20 57 06 70	7 TR CRT VERSION 20 57 06 70	7 TR CRT VERSION 20 57 06 70	IC CRT VERSION 25 22 60 70	IC CRT VERSION 25 22 60 70	IC CRT VERSION 25 22 60 70	-	IC CRT VERSION 25 22 60 70
CRT MODULE	-	-	-	-	-	-	-	TV COMB CRT-10 TR 20 63 90 90	-
UB @MIN I BEAM	107V	108V	108V	104V	104V	112V	112V	115V	115V

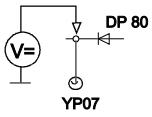
SCREEN SIZE	20"(TTT)	20"(TTT)	21"(TTA)	21"(TTA)	21"(TTA)	21"(TTT)	21"(TTT)	21"(TTT)
TUBE TUBE REF. TOCOM	CHUNGHWA 510UFB22-TC55(DPY) 20 16 97 90-NT	CHUNGHWA 510UFB22-TC55(DPY) 20 16 97 90-NT	HITACHI A51JSY61X03 10 30 26 00	VIDEOCOLOR A51EFS43X191(OT) 20 35 51 10	VIDEOCOLOR A51EBV13X01(MP) 10 31 00 20	TOSHIBA A51KSV40X02(M) 20 56 43 00	CHUNGHWA A51AEZ43X02 20 50 60 30	HITACHI A51JSY61X03
LL05(FBT) TOCOM	FCV-2010E07 20 32 63 00	OREGA DST(L28) 20 62 60 00(ASSEMBLE)	OREGA DST(L28)* 20303290(203032I0) 20452960(204529G0_P1) 20453090(95604-08)	OREGA DST(L28-OT)** L 28 VC OT 20 60 63 90	OREGA DST(L28) 20303290(203032I0-P2)	FCV-2010E07 20 32 63 00	FCV-2010E07 20 32 63 00	FCV-2010E07 20 32 63 00
ML03 TOCOM	FBT CLIP 40 26 17 0B	FBT CLIP 20 46 55 4A	FBT CLIP 20 46 55 4A	FBT CLIP 40 26 17 0B	20 46 55 4A	FBT CLIP 40 26 17 0B	FBT CLIP 40 26 17 0B	FBT CLIP 40 26 17 0B
ML05 TOCOM	-	RUBBER STUB 20 06 97 30	RUBBER STUB 20 06 97 30	-	RUBBER STUB 20 06 97 30	-	-	-
LL03(LIN. COIL) TOCOM	LL 50uH 80 36 75 00	LL 50uH 80 36 75 00	LL 50uH 80 36 75 00	LL 50uH 80 36 75 00	LL 50uH 80 36 75 00	LL 50uH 80 36 75 00	LL 50uH 80 36 75 00	LL 50uH
CL04(TUN.CAP) TOCOM	CFS 7N8 1K5V 3.5% 43 40 42 00	CPP 8N8 1K6V 43 41 00 00	CFS 8N 1K5V 43 45 06 00	CFS 7N 1K5V +-3.5% 43 32 67 00	CFS 7N2 1K6V +-3.5% 20 15 34 70	CFS 7N 1K6V +-3.5% 43 32 67 00	CFS 6N 1K6V 3.5% 20 50 76 10	CFS 6N 1K6V 3.5% 20 50 76 10
CL18 TOCOM	CC 330P 3KV 14 03 48 30	CC 270P 2KV K 14 03 60 00	-	CC 680P 3KV 20 24 94 10	-	CC 330P 3KV 14 03 48 30	CC 330P 3KV 14 03 48 30	CC 330P 3KV 14 03 48 30
CL05(S.CAP) TOCOM	CFS 470N 250V 43 04 43 00	CFS 470N 250V 43 04 43 00	CFS 470N 250V 43 04 43 00	CFS 390N 250V 43 44 15 00	CFS 470N 250V 43 04 43 00	CFS 390N 250V 43 44 15 00	CFS 390N 250V 43 44 15 00	CFS 390N 250V 43 44 15 00
RL00 TOCOM	RW 6R2 K 7W 70 43 26 30	RW 6R2 K 7W 70 43 26 30	RW 6R2 K 7W 70 43 26 30	RW 6R2 K 7W 70 43 26 30	RW 6R2 K 7W 70 43 26 30	RW 6R2 K 7W 70 43 26 30	RW 6R2 K 7W 70 43 26 30	RW 6R2 K 7W 70 43 26 30
RL22 TOCOM	RMF 82K 0.7W 1% 10 14 83 10	RMF 82K 0.7W 1% 10 14 83 10	RMF 82K5 0.7W 1% 10 22 49 20	RMF 82K 0.7W 1% 10 14 83 10	RMF 82K5 0.7W 1% 10 22 49 20	RMF 82K 0.7W 1% 10 14 83 10	RMF 82K 0.7W 1% 10 14 83 10	RMF 82K 0.7W 1% 10 14 83 10
RL12 TOCOM	RCFF 0.68R 0.5W J 10 10 00 20	RCFF 1R 0.5W J 15 00 97 40	RCFF 0.56R 0.5W J 20 32 23 30	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.47R 0.5W J 10 10 01 40	RCFF 0.82R 0.5W K 20 67 85 00	RCFF 0.82R 0.5W K 20 67 85 00	RCFF 0.82R 0.5W K 20 67 85 00
RL13 TOCOM	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00
RL14/JL12 TOCOM	RCFF 2R7 0.5W J 15 05 03 70	RCFF 2R7 0.5W J 15 05 03 70	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	RCFF 0.22R 0.5W J 13 05 51 00	
RF09 TOCOM	RMF 121K 0.25W 1% 30 94 05 20	RMF 121K 0.25W 1% 30 94 05 20	RMF 140K 0.25W 1% 80 43 78 30	RMF 140K 0.25W 1% 80 43 78 30	RMF 110K 0.25W 1% 11 08 12 10	RMF 140K 0.25W 1% 80 43 78 30	RMF 110K 0.25W 1% 11 08 12 10	RMF 121K 0.25W 1% 30 94 05 20
CRT(INTEGRATED PCB) MAIN PCB(A900)	-	-	IC CRT VERSION 25 22 60 70	IC CRT VERSION 25 22 60 70	IC CRT VERSION 25 22 60 70	-	-	-
CRT MODULE	TV COMB CRT-10 TR 20 63 90 90	TV COMB CRT-10 TR 20 63 90 90	-	-	-	TV COMB CRT 10 TR 20 63 90 90	TV COMB CRT 10 TR 20 63 90 90	TV COMB CRT 10 TR 20 63 90 90
UB @MIN I BEAM	116V	116V	116V	116V	116V	116V	116V	116V

LOCATION OF CONTROLS - EMPLACEMENT DES REGLAGES - SERVICE LAGEPLAN - POSIZIONE REGULATORI DI SERVIZIO - SITUACIÓN DE LOS AJUSTES



ADJUSTMENTS - REGLAGES - EINSTELLUNGEN - REGOLAZIONE - AJUSTES

U B — PP 34 — Contrast, brightness and volume to minimum



Screen Size	CRT Vendor / Type N°	FBT Vendor / Type N°	Min beam current UB adjustment
10"	Samsung 27GDC85X-TC10	Samsung FCV1010-E03	106V+/-0,5V
14"	Thai-CRT (baretube) A34JXV70X	Samsung FCV1410-E18	107V+/-0,5V
	ChungHwa 370KRB22-TC38	Samsung FCV1410-E18	108V+/-0,5V
		Orega 203832HO 204529H0 P1 *G5603-03	108V+/-0,5V
	Polkolor A34EFU13X91	Samsung FCV1410-E18	104V+/-0,5V
		Orega 203832HO 204529Ho P1 *G5603-03	104V+/-0,5V
17"	Philips A41EAM40X01	Samsung FCV1410-E18	110V+/-0,5V
		Orega 203832HO 204529H0 P1 *G5603-00	110V+/-0,5V

Screen Size	CRT Vendor / Type N°	FBT Vendor / Type N°	Min beam current UB adjustment
20"	Polkolor A48EEV13X01	Samsung FCV2010-E07	115V+/-0,5V
		Orega 203832IO 204529G0 P1 *G5604-00	115V+/-0,5V
	ChungHwa 510UFB22-TC55	Samsung FCV2010-E07	116V+/-0,5V
		Orega 203832IO 204529G0 P1 *G5604-00	116V+/-0,5V
21"	Hitachi A51JSY61X03	Samsung FCV2010-E07	116V+/-0,5V
		Orega 203832IO 204529G0 P1 *G5604-00	116V+/-0,5V
21"	VideoColor A51EBV13X01	Orega 203832IO 204529G0 P1 *G5604-00	116V+/-0,5V
	VideoColor A51EFS43X191	Orega *G5552-00 *G5624-00 *G5605-00	

TX91G-COMPONENTS MATCHING FOR DST(SAMSUNG OR OREGA)ACCORDING TO SCREEN SIZE (14" TO 21")

SCREEN SIZE	14"(TT1)	14"(TT1)	14"(TT1)	14"(TT1)	14"(TT1)	17"(TT4)	17"(TT4)	20"(TT1)	20"(TT4)	20"(TT1)	20"(TT1)	21"(TT4)	21"(TT1)	21"(TT1)	21"(TT1)	21"(TT1)	21"(TT1)
TUBE TUBE REF. TOCOM	14AK-CRT A34JVX01X(TUBE)(NEW) 20 33 10 80	CHUNG HWA S7002602-TCB 11 60 99 33(01)	CHUNG HWA S7002602-TCB 11 60 99 33(07)	POLAROLOR A34DVX01X(01) 20 30 44 02 A34DVX01X(02) 20 67 65 30	POLAROLOR A34DVX01X(01) PHYSELL FOCUS ELX 20 60 65 60	PHILIPS A47GHA01X 20 14 60 30	PHILIPS A47GHA02X 10 14 60 30	POLAROLOR A66DVX01X(01) 20 33 30 30	POLAROLOR A66DVX01X(01) 20 33 30	SAMSUNG S1962FQ3-TCB(SEP1) 20 16 97 69-87	SAMSUNG S1962FQ3-TCB(SEP1) 20 16 97 69-87	HITACHI A51JBX01X(02) 10 30 26 02	VIDEOCOLOR A61FSX01X(01) 20 30 81 10	VIDEOCOLOR A61FSX01X(01) 10 91 69 20	TOSHIBA A63DVX01X(02) 20 66 43 60	CHUNGHWA A64FZX01X(02) 20 60 69 20	CHUNGHWA A64FZX01X(01) 20 60 69 30	HITACHI A61JSW01X(02) 20 62 69 00
LL(ASPDT) TOCOM	FCH-3410-E18 20 20 28 80	FCH-3410-E18 20 20 28 80	FCH-3410-E18 20 20 28 80	FCH-3410-E18 20 20 28 80	OREGA DST(L27) PHYSELL FOCUS ELX 20 60 65 60	FCH-3410-E18 20 20 28 80	ORGA DST(L27) ASSEMBLE STRIPPED END	FCH-3510027 20 20 28 60	FCH-3510027 LSR PIN ANGR FOCUS 20 60 65 60	FCH-3510027 20 20 28 60	ORGA DST(L28)* 20 62 66 69(SCSSBLE)	ORGA DST(L28)* 20SS69(SCSSBLE) 20SS20(SCSSBLE) 20SS30(SCSSBLE P1) 20SS30(SCSSBLE P2) 20SS30(SCSSBLE P3) 20SS30(SCSSBLE P4)	ORGA DST(L28-OT)** L 28 1K OT 20 60 69 60	ORGA DST(L28) 20SS20(SCSSBLE) 20SS30(SCSSBLE P2)	FCH-3510027 20 20 28 60	FCH-3510027 20 20 28 60	FCH-3510027 20 20 28 60
MLAB TOCOM	FBT CLIP 40 39 17 08	FBT CLIP 40 39 17 08	FBT CLIP 20 49 55 4A	FBT CLIP 40 39 17 08	FBT CLIP 40 39 17 08	FBT CLIP 40 39 17 08	FBT CLIP 40 39 17 08	FBT CLIP 40 39 17 08	FBT CLIP 40 39 17 08	FBT CLIP 40 39 17 08	FBT CLIP 20 49 55 4A	FBT CLIP 20 49 55 4A	FBT CLIP 40 39 17 08	FBT CLIP 20 49 55 4A	FBT CLIP 40 39 17 08	FBT CLIP 40 39 17 08	FBT CLIP 40 39 17 08
MLAS TOCOM	-	-	RUBBER STUB 20 66 97 30	-	-	-	-	-	-	-	RUBBER STUB 20 66 97 30	RUBBER STUB 20 66 97 30	-	RUBBER STUB 20 66 97 30	-	-	-
LL(ADJ.BL.COIL) TOCOM	LL 22uH 20 60 69 08	LL 22uH 20 60 69 08	LL 22uH 20 60 69 08	LL 22uH 60 36 76 00	LL 22uH 60 36 76 00	LL 112uH 60 23 60 00	LL 112uH 60 23 60 00	LL 22uH 60 36 76 00	LL 22uH 60 36 76 00	LL 22uH 60 36 76 00	LL 22uH 60 36 76 00	LL 22uH 60 36 76 00	LL 22uH 60 36 76 00	LL 22uH 60 36 76 00	LL 22uH 60 36 76 00	LL 22uH 60 36 76 00	LL 22uH
CL04(TUNE.CAP) TOCOM	CFS 686 100V 11 05 67 32	CFS 76 100V 43 52 67 00	CFS 76 100V 43 52 67 00	CFS 686 100V 60 36 47 00	CFS 686 100V 11 05 67 32	CFS 686 100V 11 05 67 32	CFS 686 100V 11 05 67 32	CFS 686 100V 11 05 67 32	CFS 682 100V 60 60 22 00	CFS 686 100V 43 45 45 00	CFS 7R8 100V 5.0% 43 45 43 00	CPF 688 100V 43 41 60 00	CFS 686 100V 43 45 45 00	CFS 762 100V +-5.0% 20 19 34 70	CFS 762 100V +-5.0% 43 32 67 00	CFS 76 100V +-5.0% 43 32 67 00	CFS 686 100V 5.0% 20 69 79 70	CFS 686 100V 5.0% 20 69 79 70
CL15 TOCOM	-	CC 270P 2KV K 14 60 66 00	CC 270P 2KV K 14 60 66 00	CC 100P 2KV 14 60 66 70	CC 470P 2KV 14 60 66 80	CC 220P 2KV 14 60 62 50	CC 220P 2KV 14 60 62 50	CC 220P 2KV 14 60 62 50	-	-	CC 330P 1KV 14 60 44 90	CC 220P 2KV K 14 60 66 00	-	CC 680P 3KV 20 20 84 10	-	CC 330P 1KV 14 60 44 30	CC 330P 1KV 14 60 44 30	CC 330P 1KV 14 60 44 30
CL06(S.CAP) TOCOM	CFS 3926 250V 20 66 31 00	CFS 3926 250V 20 66 31 00	CFS 3926 250V 20 66 31 00	CFS 3926 250V 20 66 31 00	CFS 3926 250V 20 66 31 00	CFS 3926 250V 20 66 31 00	CFS 3926 250V 20 66 31 00	CFS 4706 250V 43 64 43 00	CFS 4706 250V 43 64 43 00	CFS 4706 250V 43 64 43 00	CFS 4706 250V 43 64 43 00	CFS 4706 250V 43 64 43 00	CFS 4706 250V 43 64 43 00	CFS 3926 250V 43 64 15 00	CFS 4706 250V 43 64 43 00	CFS 3926 250V 43 44 15 00	CFS 3926 250V 43 44 15 00	CFS 3926 250V 43 44 15 00
RL05 TOCOM	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 5W 70 43 68 60	FSR 682 K 5W 70 43 68 60	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30	FSR 682 K 7W 70 43 38 30
RL02 TOCOM	RMF 6R8 0.75W 1% 20 67 91 00	RMF 6R8 0.75W 1% 10 22 49 30	RMF 6R8 0.75W 1% 10 22 49 30	RMF 7R5 0.75W 1% 10294920	RMF 7R5 0.75W 1% 10 22 49 30	RMF 7R5 0.75W 1% 10 22 49 30	RMF 7R5 0.75W 1% 10 22 49 30	RMF 7R5 0.75W 1% 10 22 49 30	RMF 7R5 0.75W 1% 10 22 49 30	RMF 7R5 0.75W 1% 10 14 69 10	RMF 6R8 0.75W 1% 10 14 69 10	RMF 6R8 0.75W 1% 10 22 49 30	RMF 6R8 0.75W 1% 10 22 49 30	RMF 6R8 0.75W 1% 10 14 69 10	RMF 6R8 0.75W 1% 10 14 69 10	RMF 6R8 0.75W 1% 10 14 69 10	RMF 6R8 0.75W 1% 10 14 69 10	RMF 6R8 0.75W 1% 10 14 69 10
RL10 TOCOM	RCFF 0.68R 0.5W J 20 32 23 20	RCFF 0.68R 0.5W J 20 32 23 20	RCFF 0.68R 0.5W J 20 32 23 20	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.68R 0.5W J 20 32 23 20	RCFF 0.68R 0.5W J 20 32 23 20	RCFF 0.68R 0.5W J 10 16 60 29	RCFF 0.68R 0.5W J 10 16 60 29	RCFF 0.68R 0.5W J 16 49 97 49	RCFF 0.68R 0.5W J 20 32 23 20	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.68R 0.5W K 20 67 65 00	RCFF 0.68R 0.5W K 20 67 65 00	RCFF 0.68R 0.5W K 20 67 65 00
RL13 TOCOM	RCFF 0.68R 0.5W J 20 32 23 20	RCFF 0.68R 0.5W J 20 32 23 20	RCFF 0.68R 0.5W J 20 32 23 20	RCFF 1R 0.5W J 10 66 62 70	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.68R 0.5W J 20 32 23 20	RCFF 0.68R 0.5W J 20 32 23 20	RCFF 0.68R 0.5W J 20 32 23 20	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.68R 0.5W J 13 66 61 00	RCFF 0.68R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00
RL14/L12 TOCOM	RCFF 10R 0.5W J 10 66 66 10	RCFF 10R 0.5W J 10 66 66 10	SWAP 5MM 67 66 66 01	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 2R7 0.5W J 16 66 66 79	RCFF 2R7 0.5W J 16 66 66 79	RCFF 2R7 0.5W J 16 66 66 79	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00	RCFF 0.22R 0.5W J 13 66 61 00
RP05 TOCOM	RMF 100R 0.25W 1% 80 66 38 10	RMF 100R 0.25W 1% 80 66 38 10	RMF 100R 0.25W 1% 80 66 38 10	RMF 100R 0.25W 1% 80 66 38 10	RMF 100R 0.25W 1% 80 66 38 10	RMF 121R 0.25W 1% 80 66 66 20	RMF 121R 0.25W 1% 80 66 66 20	RMF 121R 0.25W 1% 80 66 66 20	RMF 121R 0.25W 1% 80 66 66 20	RMF 121R 0.25W 1% 80 66 66 20	RMF 121R 0.25W 1% 80 66 66 20	RMF 140R 0.25W 1% 80 42 76 30	RMF 140R 0.25W 1% 80 42 76 30	RMF 140R 0.25W 1% 80 42 76 30	RMF 140R 0.25W 1% 80 42 76 30	RMF 118R 0.25W 1% 11 66 12 10	RMF 140R 0.25W 1% 80 42 76 30	RMF 121R 0.25W 1% 80 66 66 20
CRT(INTEGRATED PCB) MAIN PCB(A000)	7 TR CRT VERSION 20 67 66 70	7 TR CRT VERSION 20 67 66 70	7 TR CRT VERSION 20 67 66 70	7 TR CRT VERSION 20 67 66 70	IC CRT VERSION 25 22 69 70	IC CRT VERSION 25 22 60 70	IC CRT VERSION 25 22 60 70	-	IC CRT VERSION 25 22 60 70	-	-	IC CRT VERSION 25 22 60 70	IC CRT VERSION 25 22 60 70	IC CRT VERSION 25 22 60 70	-	-	-	-
CRT MODULE	-	-	-	-	-	-	-	TV COMB CRT-10 TR 20 63 69 60	-	TV COMB CRT-10 TR 20 63 69 60	TV COMB CRT-10 TR 20 63 69 60	-	-	-	TV COMB CRT 10 TR 20 63 69 60	TV COMB CRT 10 TR 20 63 69 60 110V	TV COMB CRT 10 TR 20 63 69 60	TV COMB CRT 10 TR 20 63 69 60
US 49MM I 90HM	107V	109V	109V	104V	104V	112V	112V	110V	110V	110V	110V	109V	109V	109V	110V		110V	110V

*@ OPTION

DF21	16"-14" TO USE ZP016V, 17"-21" TO USE ZP020V
R172LX04	FOR STEREO BOARD
LV07	FOR CINCH BOARD ONLY
RP23	FOR 19" MODEL WITH DCDC ONLY.
RR09 RR08 RR05	INSERT FOR CLAIRADIO OPTION
RAD4/JA05	WITH RA04 DELETED JA05
JR09 JK05 TA05 DA05 CR14 CA08	DELETED WITH CLAIRADIO OPTION
RR04	OPTION FOR DOUBLE SCART
RR06	OPTION FOR PSH LED INDICATOR.
RR09	INSERT 1K FOR CLAIRADIO OPTION.
RR22	INSERT 1K FOR CLAIRADIO OPTION.
LED-RED	ADD JE21
LED-BI COLOUR	ADD RK07, RK08, JE01, JK20, RE17, RK06, RK16. RK19 DELETED JE21.
LR02 LR05 RR44 RR45 CR19 CR20 CR21 CR22	FOR DETACHED KEYBOARD ONLY.
RA37	10S (FOR MONO WITH HEADPHONE ONLY) 1K (FOR MONO WITHOUT HEADPHONE ONLY)
RP37	14", 17"/20 USE 10K, 29", 21" TO USE 15K
DL09 JV00 CC21 JS07 CF01 CH17 RD01 RR14 CR04 DR09 DR07 RR04 RR06 CR01 CR06 CR08 CT15 CR09 DR01 DR02 RP01 RA00 CC22 RD08 CF12 CR12 RD09 DR05 DR03 RP04 RP31 TF01 RF02 RF03 RF05 RD01 CR05 RA04 RP02 RP04 RP03 CP00 CP01 RP01 RP04 RP05 JV08 CH17	TO BE DEFINE.
JK22	FOR DETACHED KEYBOARD ONLY (TTA)
CR22 CR21 RR21	FOR DOUBLE SCART ONLY
WITH BURST MODE	ADDED DP45 RP45 CP45 RP48 RP30 RP47 DP49 TP45 DP48.
WITH SMART PLUG	ADD RR30 RR97 RR99 CR85 CR89 RR98 RR95 RR96 RR94 RR90 DELETE D RR29.
WITHOUT SMART PLUG	ADD RR29 DELETED RR91 RR92 RR70 RR97 RR99 CR85 CR89 RR98 RR95 R RR96.
RR01	FM 20 FOR MONO FS 20 FOR STEREO

DIFFERENCES BETWEEN BGHILL' , BGDKK', BG,L AND PAL I TX91G - Stereo

	NORM	PS BGHILL' (NTSC VIDEO)		*PS BGDKK' (NTSC VIDEO)		PS BG,L (N- VID)		PAL I (N-VID)
POS	TOCOM	DESCRIPTION	TOCOM	DESCRIPTION	TOCOM	DESCRIPTION	TOCOM	DESCRIPTION
C401	13040160	CE 47UKF +20% 16.0V 85C	13052080	CE 10UKF +20% 50.0V 85C	13040160	CE 47UKF +20% 16.0V 85C	13052080	CE 10UKF +20% 50.0V 85C
C110	16009190	CCCMIN 1R0F +-10% 50.0V	-	Deleted	16009190	CCCMIN 1R0F +10% -10% 50.0V	-	Deleted
C111	16002130	CE 10UKF +20% 16.0V 85C	-	Deleted	16002130	CE 10UKF +20% 16.0V 85C	-	Deleted
C112	13074850	CE 22UKF +20% 50.0V 85C	-	Deleted	13074850	CE 22UKF +20% 50.0V 85C	-	Deleted
C113	16006360	CCCMIN 220KF +80% -20% 25.0V	-	Deleted	16006360	CCCMIN 220KF +80% -20% 25.0V	-	Deleted
C302	-	Deleted	11056120	CCCPMAX 100R0F +-20% 50.0V	11056120	CCCPMAX 100R0F +-20% 50.0V	11056120	CCCPMAX 100R0F +-20% 50.0V
C62	11053530	CCCPMAX 390P0F +-5% 50.0V NPO	-	Deleted	-	Deleted	-	Deleted
C63	11053590	CCCPMAX 390P0F +-5% 50.0V NPO	-	Deleted	-	Deleted	-	Deleted
C352	13050770	CCCMIN 47R7F +-20% 16.0V Y5R	-	Deleted	-	Deleted	-	Deleted
C66	16006760	CCCMIN 47P0F +-5% 50.0V SL	-	Deleted	10113680	RCFMIN 0 OHM +5% 100MW0W	-	Deleted
C66	40483440	CCCPMAX 22P0F +-5% 50.0V NPO	-	Deleted	40483440	-	-	Deleted
C67	16006630	CCCMIN 2P7F +-10% 50.0V NP0	-	Deleted	16006630	-	-	Deleted
C68	16006630	CCCMIN 2P7F +-10% 50.0V NP0	-	Deleted	16006630	-	-	Deleted
D99	16007510	D-TLP ET209(BA3)E3 35.0V	-	Deleted	-	Deleted	-	Deleted
D61	16007510	D-TLP ET209(BA3)E3 35.0V	-	Deleted	67066701	STRAP 12.5 MM.	-	Deleted
D62	16007510	D-TLP ET209(BA3)E3 35.0V	-	Deleted	-	Deleted	-	Deleted
D60	16007510	D-TLP ET209(BA3)E3 35.0V	-	Deleted	-	Deleted	-	Deleted
D62	70486540	D-SLP 1W5148 100.0V 100E-3A	-	Deleted	70486540	D-SLP 1W5148 100.0V 100E-3A	-	Deleted
I02	20186170	IC-LIN STV9228 1408 A0 00	-	Deleted	20186170	IC-LIN STV9228 1408 A0 00	-	Deleted
J01	10113680	RCFMIN 0 OHM +5% 100MW0W	-	Deleted	-	Deleted	-	Deleted
J02	10113680	RCFMIN 0 OHM +5% 100MW0W	-	Deleted	-	Deleted	-	Deleted
J03	67066701	STRAP 12.5 MM.	-	Deleted	67066701	Deleted	-	Deleted
J04	10113680	RCFMIN 0 OHM +5% 100MW0W	-	Deleted	10113680	RCFMIN 0 OHM +5% 100MW0W	-	Deleted
J05	-	Deleted	-	Deleted	10113680	RCFMIN 0 OHM +5% 100MW0W	-	Deleted
J07	67066701	STRAP 12.5 MM.	-	Deleted	67066701	STRAP 12.5 MM.	-	Deleted
J22	67066701	STRAP 12.5 MM.	-	Deleted	67066701	STRAP 12.5 MM.	-	Deleted
L81	20510040	LA 7X7 330MH HZ 100	-	Deleted	20510040	LA 7X7 330MH HZ 100	-	Deleted
L83	16040160	LF 560H +-20% 1.8 OHM 3000MA	16040160	LF 4U7H +-20% 1.2 OHM	16040160	LF 4U7H +-20% 1.2 OHM	13002600	LF 82UH +-20%
O01	10086120	FILSW OFW3386M 2104 A1	20230270	FILSW 6386M 2104 A2	20230270	FILSW 6386M	10086120	FILSW OFW3386M 2104 A1
Q02	20409330	-	-	FILSW 3386HSC LITHIUM	20497040	FILSW L6362M	-	Deleted
Q31	20339190	FILCTRP 6MD HZ 38DB 700KHZ	20339190	FILCTRP 6MD HZ	-	Deleted	20339190	FILCTRP 6MD HZ 38DB 700KHZ
Q34	20339170	FILCTRP 8M74 HZ 38DB 700KHZ	20339170	FILCTRP 8M74 HZ 38DB 700KHZ	20339170	FILCTRP 8M74 HZ 38DB 700KHZ	-	Deleted
R018	16033320	RCFMIN 820R 0HM +5% 100MW0W	-	Deleted	16033320	RCFMIN 820R 0HM +5% 100MW0W	-	Deleted
R04	16002220	RCFMIN 180R0 OHM +5% 100MW0W	16033190	RCFMIN 680R 0HM +5% 100MW0W	16002220	RCFMIN 180R0 OHM +5% 100MW0W	16033190	RCFMIN 680R 0HM +5% 100MW0W
R111	16032870	RCFMIN 2K20R OHM +5% 100MW0W	-	Deleted	16031980	RCFMIN 10R0 OHM +5% 100MW0W	-	Deleted
R22	-	Deleted	16033090	RCFMIN 6R8 OHM +5% 100MW0W	-	Deleted	16033090	RCFMIN 6R8 OHM +5% 100MW0W
R27	16033330	RCFMIN 820R 0HM +5% 100MW0W	16033330	RCFMIN 820R 0HM +5% 100MW0W	16031980	RCFMIN 10R0 OHM +5% 100MW0W	16033330	RCFMIN 820R 0HM +5% 100MW0W
R089	16033210	RCFMIN 6R8 OHM +5% 100MW0W	-	Deleted	-	Deleted	-	Deleted
R181	16008130	RCF 10R0 OHM +5% 250MW0W	-	Deleted	-	Deleted	-	Deleted
R302	16031990	RCFMIN 100R0 OHM +5% 100MW0W	-	Deleted	-	Deleted	-	Deleted
R183	16032870	RCFMIN 4K7 OHM +5% 100MW0W	-	Deleted	-	Deleted	-	Deleted
R184	16032330	RCFMIN 3K9 OHM +5% 100MW0W	-	Deleted	-	Deleted	-	Deleted
R185	16032890	RCFMIN 2K7 OHM +5% 100MW0W	-	Deleted	-	Deleted	-	Deleted
R186	16032310	RCFMIN 1K8 OHM +5% 100MW0W	-	Deleted	-	Deleted	-	Deleted
R187	16031990	RCFMIN 100R0 OHM +5% 100MW0W	-	Deleted	-	Deleted	-	Deleted
R189	16033890	RCFMIN 2K7 OHM +5% 100MW0W	-	Deleted	-	Deleted	-	Deleted
R283	16002130	RCFMIN 180R0 OHM +5% 100MW0W	-	Deleted	16002130	RCFMIN 180R0 OHM +5% 100MW0W	-	Deleted
R274	16033090	RCFMIN 6R8 OHM +5% 100MW0W	10113680	RCFMIN 0 OHM +5% 100MW0W	16033090	RCFMIN 6R8 OHM +5% 100MW0W	10113680	RCFMIN 0 OHM +5% 100MW0W
T08	16007280	TR-SSD DTC144EK N	-	Deleted	-	Deleted	-	Deleted
T04	16007280	TR-SSD DTC144EK N	-	Deleted	-	Deleted	-	Deleted
T09	11070770	TR-SLPLF BC847B N 100E-3A 45V	-	Deleted	-	Deleted	-	Deleted
-	-	MAINS CORD (ROW-FTZ)	-	* MAINS CORD (ROW-FTZ)	-	MAINS CORD (FTZ)	-	MAINS CORD (ROW-FTZ)

Note: FTZ power cord required for Quadra cabinet only.

THE DIFFERENCES BETWEEN MAIN PB ATTACHED KEYBOARD AND DETACHED KEYBOARD ARE AS FOLLOWS:

MAIN PCB WITH ATTACHED KEYBOARD			ASY MAIN PB DETACHED KEYBOARD	
POS.	TOCOM	STRUCTURED NAME	TOCOM	STRUCTURED NAME
A000	25 22 69 70	PCB T28H0 MAIN-IC VERSION	25 22 69 70	PCB T28H0 MAIN-IC VERSION
BP01	10 45 16 70	PIN-SOLDER 1.3MM 6MM 3075 A0	-	DELETED
BP01	10 23 81 10	RAW CONNECTOR HOUSING	-	DELETED
BP05	-	DELETED	10 45 16 70	PIN-SOLDER 1.3MM 6MM 3075 A0
BP06	-	DELETED	10 23 81 10	RAW CONNECTOR HOUSING
BR02	-	DELETED	60 44 69 60	CONN 2.6MM 12MA ST WAY 00
C009	13 07 04 70	CE 4U7 +-20% 16V 85C	-	DELETED
CR19	-	DELETED	16 60 63 60	CCCMIN 220P K 50V
CR20	-	DELETED	16 60 63 60	CCCMIN 220P K 50V
CR21	-	DELETED	16 60 63 60	CCCMIN 220P K 50V
CR22	-	DELETED	16 60 63 60	CCCMIN 220P K 50V
DM01	16 01 04 30	D-LEM MV5491A REV0H	-	DELETED
DM01	40 48 06 60	HOLDER LED (MOD3DP0)	-	DELETED
DM07	60 60 06 60	D-ZENER BZX55C2V4 0.5V 0500MW	-	DELETED
DM09	70 43 05 40	D-SLP 1W5148 100V 100E-3A	-	DELETED
I001	10 13 24 10	IC-SP TFMK1350T PHOTO-MODULE 2737 A0	-	DELETED
J001	67 66 07 01	STRAP 0.6MM 4.6MM 12.6MM 1005 A0	-	DELETED
J004	67 66 07 01	STRAP 0.6MM 4.6MM 12.6MM 1005 A0	-	DELETED
J007	67 66 70 01	STRAP 0.6MM 4.6MM 10MM 1005 A0	-	DELETED
J009	67 66 70 01	STRAP 0.6MM 4.6MM 10MM 1005 A0	-	DELETED
J011	67 66 70 01	STRAP 0.6MM 4.6MM 10MM 1005 A0	-	DELETED
J012	67 66 70 01	STRAP 0.6MM 4.6MM 10MM 1005 A0	-	DELETED
J013	67 66 70 01	STRAP 0.6MM 4.6MM 10MM 1005 A0	-	DELETED
J022	-	-	67 66 67 01	STRAP 0.6MM 4.6MM 12.6MM 1005 A0
RK11	16 60 72 60	RCF 220R +5% 250MW	-	DELETED
RR44	-	DELETED	16 60 29 30	RCFMIN 470R +5% 100MW0W +600PPM
RR45	-	DELETED	16 60 29 30	RCFMIN 470R +5% 100MW0W +600PPM
LR02	67 66 67 01	STRAP 0.6MM 4.6MM 12.6MM	16 60 66 30	LF 68UH +10%
LR05	67 66 67 01	STRAP 0.6MM 4.6MM 12.6MM	16 60 66 40	LF 82UH +10%
SW01	10 45 33 70	DUAL TACT SWITCH	-	DELETED
SW02	-	DELETED	-	DELETED
SW03	10 45 33 70	DUAL TACT SWITCH	-	DELETED
SW06	-	DELETED	-	DELETED
SP05	20 61 23 80	SWITCH-MAIN PUSH 250V 4A 2P MSM4001 3004 A1	-	DELETED

DIFFERENCE BETWEEN SINGLE & DOUBLE SCART (STEREO)

POS.	SSCART	DSCART
RR01	SCART	21 WAY
RR04	DEL	3 WAY
R280	22R	0R
R281	75R	DEL
RV04	100R	12.6MM
RV05	75R	DEL
RV09	100R	12.6MM
RV07	75R	DEL
RV08	100R	12.6MM
RV09	75R	DEL
RV10	100R	12.6MM
RV11	75R	DEL
RP01	ASY TDA1771	ASY TDA1771 DSCART
6040	DEL	ASY DSCART
6060	DEL	3 WAY WIRE
6010	DEL	3 WAY WIRE
JR02	-	3.5ml
CD01	1N	390P
CD02	1N	390P
CT05	0R	180P
R212	180P	-
R213	180P	-
*CD01	0R	1N
*RC05	10K	33K

* FOR 19" TOMEI MODEL ONLY

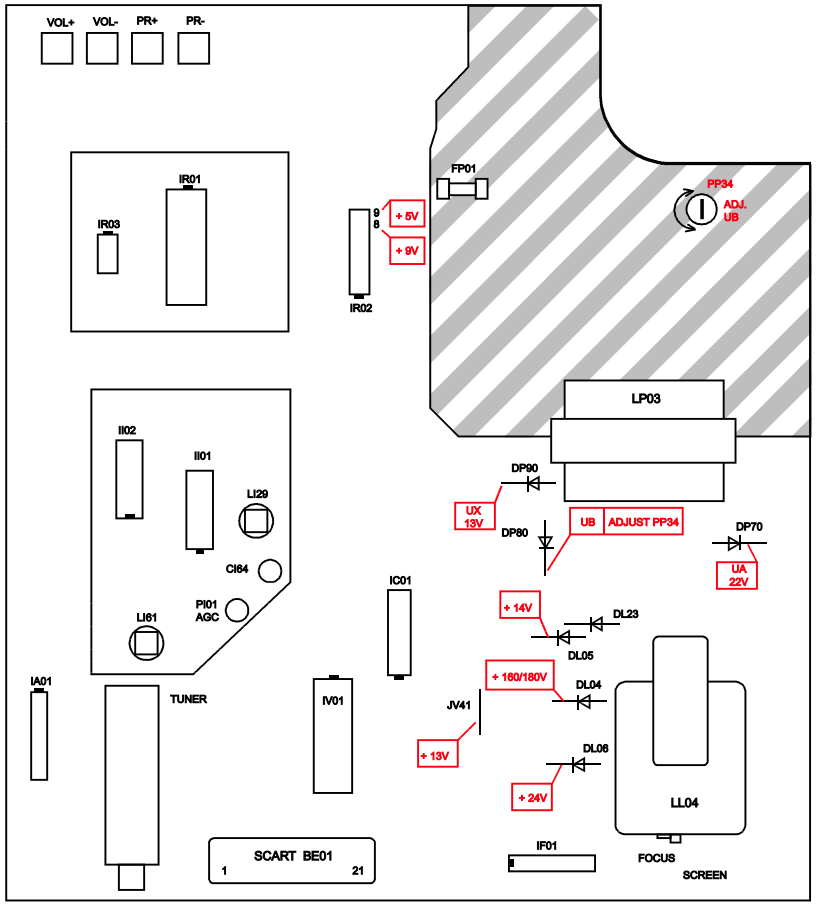
WARNING : *Before servicing this chassis read the safety recommendations.*
ATTENTION : *Avant toute intervention sur ce châssis, lire les recommandations de sécurité.*
ACHTUNG : *Vor jedem Eingriff auf diesem Chassis, die Sicherheitsvorschriften lesen.*
ATTENZIONE : *Prima di intervenire sullo chassis, leggere le norme di sicurezza.*
IMPORTANTE : *Antes de cualquier intervención, leer las recomendaciones de seguridad.*

Do not disconnect modules when they are enregized! Repairs on power supply section are to be carried out only with isolating transformer.
Ne pas retirer les modules lorsqu'ils sont sous tension. N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch Mode) qu'au travers d'un transformateur d'isolement.
Module nicht bei eingeschaltetem Gerät entfernen ! Servicearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.
Non scollegare i moduli quando sono alimentati! Intraprendere riparazioni sulla sezione alimentatore solo con trasformatore isolante.
No desconectar los módulos cuando están activados. Las reparaciones en la sección de alimentación de energía deben ser ejecutadas solamente con un transformador de separación.

⚠ Indicates critical safety components, and identical components should be used for replacement. Only then can the operational safety be garanteed.
Le remplacement des éléments de sécurité (repérés avec le symbole ⚠) par des composants non homologués selon la Norme CEI 65 entraine la non-conformité de l'appareil. Dans ce cas, la responsabilité du fabricant n'est plus engagée.
Wenn Sicherheitsteile (mit dem Symbol⚠ gekennzeichnet) nicht durch Original - Ersatzteile ersetzt werden, erlischt die Haftung des Herstellers.
La sostituzione degli elementi di sicurezza (marcati con il segno⚠) con componenti non omologati secondo la norma CEI 65 comporta la non conformitá dell'apparecchio. In tal caso è "esclusa la responsabilità " del costruttore.
La sustitución de elementos de seguridad (marcados con el simbolo ⚠) por componentes no homologados segun la norma CEI 65, provoca la no conformidad del aparato. En ese caso, el fabricante cesa de ser responsable.

Note : During measurements in the power supply unit, use the primary power unit ground (Emit. TP060).
Attention : Mesures dans le bloc alimentation. Utiliser la masse du bloc alimentation (Emet. TP060).
Achtung : Bei Messungen im Primärnetzteil. Primärnetzteilmasse verwenden (Emit. TP060).
Attentionze : Misure nell'alimentatore primario. Usare massa alimentazione primario (Emet. TP060).
Cuidado : Medida en el bloque de alimentación. Utilizar la masa del bloque de alimentación (Emet. TP060).

LOCATION OF CONTROLS - EMPLACEMENT DES REGLAGES - SERVICE LAGEPLAN - POSIZIONE REGULATORI DI SERVIZIO - SITUACIÓN DE LOS AJUSTES



ADJUSTMENTS - REGLAGES - EINSTELLUNGEN - REGOLAZIONE - AJUSTES

U B — PP 34 — Contrast, brightness and volume to minimum — DP 80 — YP07

Screen Size	CRT Vendor / Type N°	FBT Vendor / Type N°	Min beam current UB adjustment
10"	Samsung 27GDC85X-TC10	Samsung FCV1010-E03	106V+/-0,5V
14"	Thal-CRT (baretube) A34JXV70X	Samsung FCV1410-E18	107V+/-0,5V
	ChungHwa 370KRB22-TC38	Samsung FCV1410-E18	108V+/-0,5V
		Orega 203832HO 204529H0 P1 *G5603-03	108V+/-0,5V
	Polkolor A34EFU13X91	Samsung FCV1410-E18	104V+/-0,5V
		Orega 203832HO 204529Ho P1 *G5603-03	104V+/-0,5V
17"	Philips A41EAM40X01	Samsung FCV1410-E18	110V+/-0,5V
		Orega 203832HO 204529H0 P1 *G5603-00	110V+/-0,5V

Screen Size	CRT Vendor / Type N°	FBT Vendor / Type N°	Min beam current UB adjustment
20"	Polkolor A48EEV13X01	Samsung FCV2010-E07	115V+/-0,5V
		Orega 203832IO 204529G0 P1 *G5604-00	115V+/-0,5V
	ChungHwa 510UFB22-TC55	Samsung FCV2010-E07	116V+/-0,5V
		Orega 203832IO 204529G0 P1 *G5604-00	116V+/-0,5V
21"	Hitachi A51JSY61X03	Samsung FCV2010-E07	116V+/-0,5V
		Orega 203832IO 204529G0 P1 *G5604-00	116V+/-0,5V
21"	VideoColor A51EBV13X01	Orega 203832IO 204529G0 P1 *G5604-00	116V+/-0,5V
	VideoColor A51EFS43X191	Orega *G5552-00 *G5624-00 *G5605-00	

U G2 / cutoff	SCREEN	Use a peak white pattern. Mode preference: Image Ambiance AV (no Signal, black screen)	highest output CRT V Collector: TT52,TT62,TT72 (Transistor Version) Pin 9, 12, 15 IT01 (IC Version)	Adjust Screen voltage VG2 120V +/- 5V: 20", 14", 15", 17" 145V +/- 5V : 20" & 21" + = 50% B G RED Cutoff level GND
FOCUS	FOCUS	Contrast = 100% Brightness = 0% Test pattern (standard values)		Sharp picture

ADJUSTMENTS - REGLAGES - EINSTELLUNGEN
REGOLAZIONE - AJUSTES

U G2 / cutoff	SCREEN	Use a peak white pattern. Mode preferred: Image Assistance AV (no Signal, black screen)	27 Highest output CRT V Collector TT83,TT93,TT72 (Transistor Version) Pin 9, 12, 19 ITR1 (IC Version)	Adjust Screen voltage VG2 120V-V-BO-20°, 14", 19", 17" 140V-V-BO / 20° & 25" + = 80% B G RED Cutoff test GND
FOCUS	FOCUS	Contrast = 100% Brightness = 0% Test pattern (standard values)		Sharp picture

SERVICE-MODE (GB)

It is necessary to enter the Service Mode in order to carry out alignment of the TV set. Most adjustments can be made with the RCU, except the Uoptions, Focus and Screen voltages.

1. Service Mode Access

1.1 With the RCU, switch the TV set into the "Standby" mode.
1.2 Switch "Off" the TV set by mains supply switch (wait until LED is dark).
1.3 Whilst depressing the RCU "Blue (VT)" button, switch "On" the TV set using the mains supply switch.
1.4 Release and press once again the RCU "Blue (VT) " button, the following "Set-Up" menu should be displayed."

SET-UP	VIDEO	GEOM
TX91 FM20 ---------- TM		

Important : The Service Mode cannot be entered if any equipment is connected to the Scart socket, i.e. pin 8 switching voltage present.

2. Function or Page Selection (GEOM)

2.1 With the RCU Volume "+" and "-" buttons, highlight the menu containing the function to be aligned.
2.2 Press the RCU "Blue (VT)" 0 or the middle value one ▷◁ 0 , select a setting or a page (1, 2, 3,...).

3. Switching between Service and TV modes

3.1 Whilst in the Service Mode, normal TV controls are disabled, to enable these controls whilst in the Service Mode (i.e. for channel changing etc.) press the"TV" button on the RCU. To return to the Service Mode, press the "Blue (VT)" button on the RCU.

4. Alignment and storing new function value

4.1 The current value of the selected function is displayed in a hexadecimal form to the right of the function name. This value is adjusted by means of the RCU Volume "+" and "-" buttons.
4.2 To STORE the functions new value, highlight MEMO and press the RCU Volume "+" button.
4.3 The R-STO(RE) line allows you to call values stored in NVM with the "-" key.
4.4 Selection the ROM functions downloads the production software default values, these are not very accurate and should only be used in very special cases.
Whilst in the «Service-Mode» a long press (more than 3s) of the RCU «0» button, will reset the TV to the «factory default conditions».

5. Leaving the Service Mode

5.1 To leave the Service mode either, switch the TV set into "Standby" or switch "Off" the mains supply.

MODE SERVICE (F)

Le mode service sert au réglage de l'appareil. Toutes les opérations de réglage s'effectuent à l'aide de la télécommande (sauf la tension de synthèse, les réglages de Focus et de tension de grille-écran).

1. Accès au mode service

1.1 Commuter le téléviseur en position de veille avec la télécommande
1.2 Eteindre le téléviseur par l'interrupteur secteur (attendre l'extinction complète du voyant).
1.3 Maintenant la touche bleue enfoncée et mettre simultanément le téléviseur en marche avec l'interrupteur secteur.
1.4 Le menu suivant apparaît après avoir appuyé à nouveau sur la touche bleue. (VT).

SET-UP	VIDEO	GEOM
TX91 FM20 ---------- TM		

Attention : Le mode service n'est pas accessible si un appareil est connecté à la prise péritélévision.

2. Sélection de la fonction ou de la page (GEOM)

Par les touches +/- de la télécommande vous pouvez choisir le menu correspondant: SET- UP,VIDEO ou GEOM et avec la touche bleue (VT) 0 ou la touche valeur moyenne ▷◁ 0 , sélectionner un réglage ou une page (1, 2, 3,...).

3. Inversion entre modes service et TV

Les fonctions télévision normales ne sont pas utilisables en mode service. Si elles sont nécessaires en mode service (p. ex. changement de programmes), la touche (TV) permet de commuter en mode TV. Vous pouvez revenir au mode service en appuyant sur la touche bleue.

4. Réglage des fonctions sélectionnées; mémorisation

La valeur momentanée de la fonction sélectionnée est indiquée sous forme hexadécimale à droite, à coté de la position à régler et peut être modifiée avec la télécommande par la touche + ou -.
La ligne MEMO permet de mémoriser les nouvelles valeurs de réglage avec la touche +.
La ligne R-STO(RE) permet de rappeler les valeurs mémorisées en NVM avec la touche "-".
Les valeurs par défaut du logiciel peuvent être changées en sélectionnant la fonction ROM . Elles ne conviennent cependant qu'une approximation du réglage et ne doivent être utilisées qu'en cas de nécessité.
En mode service une longue pression (plus de 3s) sur la touche «0»reset la TV aux valeurs par défaut des réglages usine.

5. Sortie du mode service

Pour sortir du mode service, commuter le téléviseur en position de veille ou la mettre hors service par l'interrupteur secteur.

SERVICE-MODE (D)

Der Service-Mode wird für den Gerätieabgleich benötigt. Alle Einstellungen erfolgen mit der Fernbedienung (bis auf Systemspannung, Fokuseinstellung und Bildrö hrenspannung).

1.Service-Mode einschalten

1.1 Mit der Fernbedienung das Fernsehgerät in Stand-by schalten.
1.2 Das Gerät mit dem Netzschalter ausschalten (warten bis LED dunkel ist)
1.3 Die blaue Taste der Fernbedienung gedrückt halten und gleichzeitig das Gerät mit dem Netzschalter einschalten.
1.4 Das folgende Menü erscheint nach erneutem Drücken der blauen Taste

SET-UP	VIDEO	GEOM
TX91 FM20 ---------- TM		

Achtung : Der Service-Mode läßt sich nicht einschalten, wenn an einer Euro-AV-Buchse ein Gerät adressiert ist, d.h. die Schaltspannung anliegt.

2. Funktionswahl oder Seitenwahl (GEOM)

Mit den Tasten +/- der Fernbedienung können Sie das folgende Menü auswählen: SET-UP,VIDEO oder GEOM, und mit der blauen Taste(VT) 0 oder der Taste Mittelwert ▷◁ 0 können Sie eine Einstellung oder eine Seite (1,2,3,...) auswählen.

3. Umschalten zwischen Service- und TV-Betrieb

Im Service-Mode sind die normalen Fernsehfunktionen nicht bedienbar. Werden diese im Service-Mode benötigt (z.B. Programmwechsel), kann mit der Taste (TV) in den normalen TV-Betrieb gewechselt werden. Durch Drücken der blauen Taste gelangt man zurück zum Service Mode.

4. Abgleich der gewählten Funktion und Speichern

Der momentane Wert der gewählten Funktion wird hexadezimal rechts neben der abzugleichenden Position angezeigt und kann mit der Taste + bzw. - auf der Fernbedienung verändert werden.
Die Änderungen des jeweiligen Werts können unter MEMO mit der +. Taste gespeichert werden. In der Zeile R-STO(RE) können die in NVM gespeicherten Werte mit der Taste "-" aufgerufen werden.
Im Menüpunkt ROM kann man die Software-Defaultwerte laden.Sie sind aber nur eine grobe Annäherung an den noch vorzunehmenden Abgleich und sollten nur im Notfall verwendet werden.
Im Service-Mod : Durch längeren Druck (mehr als 3 Sek.) wird das Gerät auf die "Factory default werte" zurückgesetzt.

5. Service-Mode verlassen

Zum Verlassen des Service-Mode das Gerät in Stand By schalten oder mit dem Netzschalter ausschalten.

MODO SERVICIO (E)

Se necesita el MODO SERVICIO para ajustar el aparato. Todos los ajustes se hacen con el mando a distancia (a excepción de la tensión del sistema, los ajustes del foco y las tensiones de la rejilla de pantalla).

1. Ajustar el MODO SERVICIO

1.1 Con el mando a distancia conectar a STANDBY el televisor.
1.2 Desconectar el aparato con el interruptor de la red (esperar hasta que el LED se apague).
1.3 Mantener pulsada la tecla azul y conectar el aparato simultáneamente con el interruptor de red.
1.4 El menú siguiente aparece volviendo a pulsar la tecla azul.

SET-UP	VIDEO	GEOM
TX91 FM20 ---------- TM		

Atención : No se puede conectar el MODO SERVICIO cuando en Euroleme-AV está activado un aparato, es decir, cuando existe tensión de conexión.

2. Selección de las funciones o selección de página (GEOM)

10. Mediante las teclas +/- del telemando usted puede escoger el menú correspondiente: SET-UP, VIDEO o GEOM y con la tecla azul (VT) 0 o la tecla valor medio ▷◁ 0 , seleccionar un ajuste o una página (1, 2, 3,...)

SERVICE-MODE (I)

Il Service-Mode è necessario per l'allineamento dell'apparecchio. Tutte le regolazioni si effettuano con il telecomando. (a parte la tensione del sistema, la regolazione del fuoco e la tensioni della griglia schermo).

1. Attivazione del Service-Mode

1.1 Commutare il televisore in stand-by con il telecomando.
1.2 Spegnere l'apparecchio con l'interruttore di rete (attendere finché il LED è spento).
1.3 Tenere premuto il pulsante blu e accendere contemporaneamente l'apparecchio con l'interruttore di rete.
1.4 Il seguente menu appare non appena si adona nuovamente il pulsante blu.

SET-UP	VIDEO	GEOM
TX91 FM20 ---------- TM		

Attenzione : Il Service-Mode non si può attivare se è attivato un apparecchio collegato alla presa di peritelevisione AV, cioè se è presente la tensione accitante.

2. Scelta della funzione o selezione pagina (GEOM).

Per i tasti +/- del telecomando, potete scegliere il menu corrispondente: SET-UP, VIDEO o GEOM e con il tasto blu (VT) 0 o il tasto valore medio ▷◁ 0 , una regolazione o una pagina (1, 2, 3, ecc.)

3. Commutazione fra funzione Service-Mode e TV

Nella modalità Service-Mode non si possono attivare le normali funzioni televisive. Se occorre richiamarle in Service-Mode (ad es. se si vuole cambiare il programma), si può attivare la normale modalità TV con il pulsante (VT). Premendo il pulsante blu si rattiva il Service-Mode.

4. Taratura della funzione scelta e memorizzazione

Il valore momentaneo della funzione scelta viene indicato in formato esadecimale a destra, accanto alla posizione da allineare e può essere cambiato con il pulsante + o - del telecomando.
La modifiche effettuate nel relativo menu si possono memorizzare in MEMO con il pulsante +. La linea R-STO(RE) permette di richiamare i valori memorizzati in NVM con il tasto -.
Nell'opzione di menu ROM si possono caricare i valori di default del software. Essi rappresentano però una taratura approssimativa prima di eseguire quella definitiva e si dovrebbero usare solo in caso di emergenza.
Mentre si è nel sistema Service, una lunga pressione (più di 3s) del tasto «0» riporterà il TV alle condizioni di default di fabrica».

5. Disattivazione del Service-Mode

Per disattivare il ServiceMode, commutare l'apparecchio in stand-by o spegnerlo con l'interruttore di rete.

SERVICIO-MODE (P)

Es necesario el MODO SERVICIO para ajustar el aparato. Todos los ajustes se hacen con el mando a distancia (a excepción de la tensión del sistema, los ajustes del foco y las tensiones de la rejilla de pantalla).

1. Ajustar el MODO SERVICIO

1.1 Con el mando a distancia conectar a STANDBY el televisor.
1.2 Desconectar el aparato con el interruptor de la red (esperar hasta que el LED se apague).
1.3 Mantener pulsada la tecla azul y conectar el aparato simultáneamente con el interruptor de red.
1.4 El menú siguiente aparece volviendo a pulsar la tecla azul.

SET-UP	VIDEO	GEOM
TX91 FM20 ---------- TM		

Atención : No se puede conectar el MODO SERVICIO cuando en Euroleme-AV está activado un aparato, es decir, cuando existe tensión de conexión.

2. Selección de las funciones o selección de página (GEOM)

10. Mediante las teclas +/- del telemando usted puede escoger el menú correspondiente: SET-UP, VIDEO o GEOM y con la tecla azul (VT) 0 o la tecla valor medio ▷◁ 0 , seleccionar un ajuste o una página (1, 2, 3,...)

3. Comutar entre funcionamiento Servicio y TV

En el MODO SERVICIO las funciones de televisión normales no pueden operarse. Si se necesitan datos en MODO SERVICIO (p.ej., cambio de programa), con la tecla (TV) puede conmutarse a la operación TV normal.
Pulsando la tecla azul se vuelve al MODO SERVICIO.

4. Ajuste de la función elegida y almacenamiento

El valor momentáneo de la función elegida es indicado de modo hexadecimal a la derecha, al lado de la posición a ajustar, y puede cambiarse con la tecla + o bien - en el mando a distancia. Los cambios del menú pueden almacenarse bajo MEMO con la tecla +.
La línea R-STO (RE) permite recuperar los valores memorizados en NVM con la tecla "-".
En el punto de menu ROM se pueden cargar los valores por defecto del software. Sin embargo, son sólo una aproximación burda al ajuste sólo a realizar y deben usarse sólo en caso de emergencia.
En modo servicio, el se mantiene pulsada (más de 3 seg.) la tecla «0» toma por defecto los valores de ajusete en fábrica».

5. Salir del MODO SERVICIO

Conmuta el aparato a STANDBY o ón de salir del MODO SERVICIO o desconectar con el interruptor de la red.

TV mono :

SET-UP				
Software code and configuration				
BRAND	1	2	3	NONE
NORM	B BD	BLD	SIL	SL I
SUB-VOL	- 2 / 2			1
- R-STO	+ MEMO			O ROM

TV stereo :

SET-UP				
Software code and configuration				
BRAND	1	2	3	NONE
NORM	B BD	BLD	SIL	SL I
DEC PRO	On			Off
- R-STO	+ MEMO			O ROM

SET-UP	
BRANDT	Brand Selection 1 : TELEFUNKEN 2 : SABA/FERGUSON/ 3 : THOMSON/ NORDMENDE NONE : NON DEFINI
NORM	Standards B = BG PAL SECAM (Sound FM 5,5MHz) I = I PAL (UK/IRELAND) (Sound FM 6MHz) L = L SECAM (France) (Sound AM 6,5MHz) D = D/K SECAM (SOUND FM 6,5 MHz) M = NTSC M (Sound FM 4,5MHz)
DEC PRO (TX91G stereo)	NICAM From Canal+ decoder On : Enable OFF : Disable The special sound path handling for Canal+ on PRO4
SUB-VOL (TX91G mono)	Volume offset adjustment « — V — » = 80% Ve (AV) = 600mV / 1kHz Adjust SUB-VOL Ve (2-p-p) =0,6VRMS

VIDEO
page 1
SUB-BRT 7 / 7 0
VIDEO page 2
R-DC 00-3F 24
G-DC 00-3F 12
VIDEO page 3
R-DRV 00-3F 1F
G-DRV 00-3F 1E
VIDEO page 4
B-DRV 00-3F 1C
PEAK -/+
VIDEO page 5
SUB-COL -7 / 7 2
- RESTORE - MEMO 0 ROM

VIDEO		
SUB-BRT ☼+◔+◑ = 80%		black
R - DC*		grey
G - DC*		grey
R -DRV**		white
G - DRV**		white
B - DRV**		white
PEAK*** PEAK***		4M0 80s 10*0 60s 14* 40s 15*0 60s 17* 40s 19* 40s
☼+◔+◑ = 80% ◑ = 100%	CRT Pin 6,8,11	
	Oscillo. or voltmeter	
SUB-COL	75% PAL Colour bar Test pattern	Color offset adjustment Saturation=100% CRT Pin 11(B) (Oscillo.1)

GEOM		
H - PHA	00 - 3F	0E
V - AMP	00 - 7F	62
V - LIN	00 - 0F	09
H - PHA	00 - 3F	29
H - AMP	00 - 3F	15
- R-STO	+MEMO	0 ROM

Test Bar pattern used : 4/3 with geometric circle, adjust separate for 4/3 and 16/9 format

GEOM	
H - PHA	
V - Amp 60Hz	
H - AMP 60Hz	
V - Pos	
OFFSET	V- AMP OFFSET ADJUSTMENT

Tableau Software Code

Software Revision code	Description	Remarque
TX91 FM - (YY)	TX91G Europe Mono Software (YY)	(YY) = 10, 11,12 ...20, 21
TX91 FS - (YY)	TX91G Europe Stereo Software (YY)	(YY) = 10, 11,12 ...20, 21
TX91 FAM - (YY)	TX91G Asia Mono Software (YY)	(YY) = 10, 11,12 ...20, 21
TX91 FAS - (YY)	TX91G Asia Stereo Software (YY)	(YY) = 10, 11,12 ...20, 21

TV Configuration Code :

T	TEXT MODULE
S	STEREO MODULE
M MONO SET	

Notes :
** adjust and stop separate for RF BG, RF L Norm, AV and RGB mode.
*** After PEAK white adjustment control brightness and cut off setting. Repeat the adjustments if necessary.

Oscillo.1
blue k (PAL)
correct

Oscillo.1
blue k (PAL)
Incorrect

GEOMETRY MODE ALIGNMENT - RECEIVER : TV WITH 4/3 TUBE

Signal : 4/3 test pattern 50Hz - 60Hz

4 / 3 standard mode		overscan V=107% , H=107% 1- Adjust the horizontal centering 2 - Adjust vertical centering 3 - Adjust picture hwith to V = 107% - Repeat if necessary with 60 Hz
16 / 9 standard mode		1 - Adjust horizontal centering (reference : screen edge) 2 - Adjust the vertical emplied until the oval heigh is 75% of the oval width. - Repeat if necessary with 60 Hz

MEASUREMENT CONDITIONS - CONDITIONS DE MESURES - MESSBEDINGUNGEN CONDIZIONI DI MISURA - CONDICIONES DE MEDIDAS

RECEIVER :
Bar test pattern : PAL, I standard, 100% white.

- On UHF, input level 1 mV
- Via the scart socket, input level 1 Vpp

Colour, contrast and brightness at mid-position, sound at minimum.
Programme selected : PR 01.
DC voltages measured between the point and earth using a digital voltmeter.

RECEPTEUR :
Mire de barres : SECAM, Norm L, Blanc 100%.

- En UHF, niveau d'entrée 1 mV
- Par la prise Péritélévision, niveau d'entrée 1Vcc.

Couleur, contraste, lumière à mi-course, son minimum.
Programme affecté PR 01.
Tensions continues relevées par rapport à la masse avec un voltmètre numérique.

EMPFÄNGER :
Farbbalken : PAL, Norm G, Weiss 100%

- Bei UHF Eingangspegel 1 mV.
- Über die Scartbuchse : Eingangspegel 1 Vss.

Farbe, Kontrast, Helligkeit in der Mitte des Bereichs, Ton auf Minimum.
Zugeordnetes Programm PR 01.
Gleichspannungen mit einem digitalen Voltmeter zur Masse gemessen.

RICEVITORE :
Monoscopio per barre : PAL, norma G. bianco 100%.

- In UHF, livello d'entrata 1 mV,
- Per la presa SCART, livello d'entrata 1 Vcc.

Colore, Contrasto, Luce a metä corsa, Suono minimo.
Programma designato PR 01.
Tensioni continue rilevate rispetto alla massa con un voltametro numerico.

RECEPTOR :
Mira de barras : PAL, norma G, blanco 100%.

- En UHF, nivel de entrada 1 mV,
- Por la toma Peritelevision, nivel de entrada 1 Vpp.

Color, Contraste, luz a mitad de carrera, Sonido minimo.
Programa afectado PR 01.
Tensiones continuas marcadas en relacion a la masa con un voltimetro digital.

PARTS LIST
LISTE PIECES DETACHEES
ERSATZTEILLISTE
LISTA PARTI DI RICAMBIO
LISTA DE PIEZAS DE REPUESTO

TELEFUNKEN
MG1470CT
Chassis TX91G

MODULES

MAIN	**TX91G14"MPBPSBGHILL'**	
DVT	**DVTTX91G**	**20525850**
FCB	**KBTX9114"**	**20734490**

FP23,70	MP160	⚠ 10457130
FP90	MP125	⚠ 10469180
IA01	TDA7253	20203120
IC01	TDA4665	20335750
IF01	TDA1771	10044490
II01	STV8224A2	10451330
II02	STV8225	20165170
IK06	TMFT1330T	10132400
IR01	ST9293J9B1/HAI FM20A	20801170
IR02	TDA8139	10044580
IR03	ST24C04/B1	10030300
IV01	STV2118B (CUT 5.1)	10384680
IX01	SAA5281ZP/E	10258810
IX02	MC7805/CT	46025200

TA05,06,**TF**21, **TI**28,32,**TK**02, **TR**01,04,05	BC848B SMD	35030590
TH02	BC338-40	16000590
TI01	MMBTH10L SMD	16006500
TI03,04,30	DTC144EK SMD	16007030
TI31,**TV**01,02	BC858B SMD	16006330
TL01,**TP**22	BC337-40	45001466
TL02	BUH515D	20666700
TL13	2SC2236Y	16000220
TP20	BUL512HI	10440310
TP23	MPS750	16001340
TP34	BC858C SMD	50854683
TR02	BC548B	16000930
TT51,61,71	BF423	16003110
TT52,62,72	2SC2482N	16003760
TT81	BC807-40 SMD	16006220
TX01	BC558B	16001110
TX02	BC548C	16000940

DA05	BZX55B2V7	80444010
DC01,**DK**04, **DP**34,**DR**07	BZX55C5V1	80444140
DF01,**DL**07,08	1N4001	16008160
DF03,04	BZX55C11	11073670
DF21	BZX55C15	20475420
DF22,**DI**62, **DK**01,**DL**01,11, 20,23,**DP**25, **DR**05,**DT**50,60, 70,86,**DV**01,02, 03,**DX**01,02,03, 04	1N4148	44009209
DH01	BZX55C30	80444170
DH02	BZX55C5V6/ZPD5,6	44025401
DI33,34,50,51, 52,60	BA282	16007510
DK02	MV5491A LED	10036730
DK05	BZX55C6V2	20475410
DL02,04,05,06, **DP**19,23,31,32	RGP10G	10459090
DL12	BZX55B4V3	90578000
DL13	BZX55B9V1	70438220
DL21	ZPD6,8	44074501
DP01,02,03,04	BYW27-1000	10455390
DP29,37,38	LL4148 SMD	16012450
DP33	BZX85C27/ZPY27	10246740
DP70,90	RGP15G	10272800
DP80	BYW76	16009120
DR01	BZX55B13	50890560
DR04,**DT**85	ZPD8,2	44021504
DT51,61,71	BAV21	44044407
DV04	BZX55B8V2	40441820

QC01	4M433619HZ	10087710
QC02	3M579545HZ	10087720
QI01	OFWG1967M FOS	10247670
QI02	33M9HZ FOS	20489330
QI31	6M0HZ	48042300
QI32	5M5HZ	20336430
QI33	6M0HZ	48039700
QI34	5M74HZ	20338170
QR01	8M0HZ	10254430
QV01	503K0HZ	48023700
QX01	27M0HZ	20548370

LI29	38M9HZ	20310930
LI61	32M4HZ	20510040

PI01	10K0 OHM	20115670
PP34	470R0 OHM	10260350

RA25	1R0 OHM 5% 2W	20544230
RF05	1R8 OHM 5% 0,50W	20649310
RF09	100K0 OHM 1% 0,25W	⚠ 50883810
RH16	10R0 OHM 5% 0,25W	⚠ 15009580
RH17,**RX**01	27R0 OHM 5% 0,25W	⚠ 15009840
RK04,**RR**20, **RT**68,**RV**04,06, 08,10	100R0 OHM 5% 0,25W	30943330
RL07	1K0 OHM 10% 0,50W	⚠ 10226290
RL08	33R0 OHM 5% 2W	15022830
RL09	8R2 OHM 10% 7W	70432630
RL11	15R0 OHM 5% 0,50W	⚠ 10226280
RL12,13	0R56 OHM 5% 0,50W	⚠ 10313110
RL16,22	82K0 OHM 1% 0,70W	10148310
RL22	54K5 OHM 1% 0,70W	10224940
RP01	5R1 OHM 10% 5W	20369640
RP02	25R0 OHM 220V PTC	⚠ 30093400
RP15	10M0 OHM 5% 0,70W	⚠ 20564520
RP20	1R0 OHM 5% 2,50W	10383240
RP44	1R0 OHM 5% 0,25W	⚠ 15009730
RT52,62,72	10K0 OHM 10% 2W	15022700
RT90	10R0 OHM 5% 0,70W	15006200
RV02	56R0 OHM 5% 0,30W	⚠ 15010060

CL04	6N8F 3,5% 1K6V	10374600

R : RECYCLED PART
: PIECE RECYCLEE
: AUSTAUSCHTEILE
: RICAMBIO RICICLATO
: MODULO REPROCESADO

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CL05	390N0F 10% 250V		43171400
CL06	680N0F 20% 160V		13076980
CL08	6N8F 5% 400V		10158380
CL09	1U0F 10% 160V	⚠	20706480
CL10,15	330P0F 20% 1K0V		14035270
CL17,**CP**13,91	330P0F 20% 400V		14002220
CL18	270P0F 10% 2K0V		14036000
CP01,02	100N0F 20% 275V	⚠	10331520
CP03	68N0F 20% 250V		10256210
CP04	10N0F 20% 400V		10094420
CP05,06	4N7F 1K0V		10058740
CP10	100U0F 385V		30662900
CP15	1N0F 20% 400V	⚠	20822690
CP21	1N0F 10% 1K0V	⚠	43441400
CP24	10N0F 10% 100V		10279180
CP71	2N2F 10% 400V		10188880
CP71	2N2F 400V		10078890
CP79	470P0F 10% 3K0V		14006050
CT82	2U2F 20% 250V		10190240
CT84	10N0F 20% 400V		14033040
CT85	1N0F 2K0V		14034870

LL01	DRIVER		20609540
LL03		⚠	30909908
LL05	FCV1410E18	⚠	20202880
LP02		⚠	10395160
LP03	SMT17	⚠	10387120

OTHER PARTS
AUTRES PIECES
SONSTIGE TEILE
ALTRE PARTI
OTRAS PIEZAS

BE01	SCART SOCKET PRISE PERITEL EURO-AV-BUCHSE EUROPRESA NORMALIZZATA EUROCONECTOR		67523300
BE01	HEADPHONE SOCKET PRISE CASQUE KOPFHOERERBUCHSE PRESA JACK TOMA JACK		20561540
BE03	CINCH SOCKET PRISE CINCH CHINCH-BUCHSE PRESA CINCH TOMA CINCH		30930090
BE05	CINCH SOCKET PRISE CINCH CHINCH-BUCHSE PRESA CINCH TOMA CINCH		20483820
BT01	CATHODE RAY TUBE SOCKET SUPPORT TUBE CATHODIQUE BILDROEHRENFASSUNG SUPPORTO TUBO CATODICO SOPORTE T.R.C	⚠	20174620
FP01	1A6T TIME-LAG FUSE 1A6T FUSIBLE TEMPORISE 1A6T SICHERUNG 1A6T FUSIBILE TEMPORIZZATO 1A6T FUSIBLE TEMPORIZADO	⚠	48064700
NH01	CTT5000T UHF/VHF TUNER CTT5000T TETE UHF/VHF CTT5000T UHF/VHF TUNER CTT5000T TUNER UHF/VHF CTT5000T SINTONIZADOR UHF/VHF	R	20808880
SK01,02,03,04	MICROSWITCH MICRO CONTACTEUR MIKROSCHALTER MICROINTERRUTTORE MICROCONTACTOR		10731200

EQUIPMENT/PRESENTATION
EQUIPEMENT/PRESENTATION
AUSSTATTUNG/GEHAEUSE
PARTI VARIE
EQUIPO/PRESENTACION

POWER SUPPLY LEAD CORDON D'ALIMENTATION NETZKABEL CAVO DI ALIMENTAZIONE CABLE DE ALIMENTACION	⚠	20762980
ON/OFF BUTTON TOUCHE MARCHE/ARRET EIN-AUS TASTE TASTO ACCESO/SPENTO TECLA MARCHA/PARADA		20756850
BUTTON ASSY ENSEMBLE DE TOUCHES TASTENEINHEIT ASSIEME TASTI CONJUNTO DE TECLAS		20756830
REAR PANEL DOS RUECKWAND PANNELLO POSTERIORE TAPA POSTERIOR	⚠	20756810
CABINET WITH FRONT PANEL COFFRET EQUIPE AVEC FACADE GEHAEUSE KPL MIT FRONTPLATTE MOBILE COMPLETO MUEBLE EQUIPADO		20756790
FOLDING BOX EMBALLAGE CARTON KARTON IMBALLAGGIO CARTONE EMBALAJE CARTON		2075622A
DEGAUSSSING COIL BOBINE DE DEMAGNETISATION ENTMAGNETISIERUNGSSPULE BOBINA DI SMAGNETIZZAZIONE BOBINA DE DESIMANTACION	⚠	20613360
16R OHM 3W LOUDSPEAKER 40X70 16R OHM 3W HAUT PARLEUR 40X70 16R OHM 3W LAUTSPRECHER 40X70 16R OHM 3W ALTOPARLANTE 40X70 16R OHM 3W ALTAVOZ 40X70		2041186A
370KRB-TC38 CATHODE RAY TUBE 370KRB-TC38 TUBE CATHODIQUE 370KRB-TC38 FARBBILDROEHRE 370KRB-TC38 TUBO CATODICO 370KRB-TC38 T.R.C	⚠	20240320
ON/OFF SWITCH CONTACTEUR MARCHE/ARRET EIN-AUS SCHALTER CONTATTORE ACCESO/SPENTO CONTACTOR MARCHA/PARADA	⚠	20156490
HANDLE POIGNEE GRIFF MANIGLIA EMPUNADURA		2013048C
FITTING UPPER CALE SUPERIEURE POLSTER OBEN DISTANZIATORE SUPERIORE CALZO SUPERIOR		2013045C
FITTING DOWNER CALE INFERIEURE POLSTER UNTEN DISTANZIATORE INFERIORE CALZO INFERIOR		2013044B
TELESCOPIC ANTENNA ANTENNE TELESCOPIQUE TELESKOPANTENNE ANTENNA TELESCOPICA ANTENA TELESCOPICA		2008854A
RC1132 REMOTE CONTROL RC1132 TELECOMMANDE RC1132 FERNBEDIENUNG RC1132 TELECOMANDO RC1132 TELEMANDO		10286790

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MANUALE

MG1470CT PARTS LIST MG1470CT LISTE DE PIECES DETACHEES MG1470CT ERSATZTEILLISTE MG1470CT LISTA PARTI DI RICAMBIO MG1470CT LISTA DE PIEZAS DE REPUESTO	35052760
TX91G SERVICE MANUAL (EUROPE) TX91G DOC TECHNIQUE (EUROPE) TX91G TECHNISCHE DOKUMENTATION (EUROPE) TX91G DOCUMENTAZIONE TECNICA (EUROPE) TX91G DOCUMENTACION TECNICA (EUROPE)	35041190
MG1470CT/MS2170CT UM TELEFUNKEN F MG1470CT/MS2170CT NU TELEFUNKEN F MG1470CT/MS2170CT BA TELEFUNKEN F MG1470CT/MS2170CT IU TELEFUNKEN F MG1470CT/MS2170CT IU TELEFUNKEN F	20756160

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THOMSON MULTI MEDIA

TV

Brandt FERGUSON NORDMENDE SABA TELEFUNKEN THOMSON

PARTS LIST
LISTE PIECES DETACHEES
ERSATZTEILLISTE
LISTA PARTI DI RICAMBIO
LISTA DE PIEZAS DE REPUESTO

FERGUSON
V51NB
Chassis TX91G

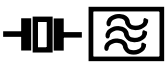
MODULES

MAIN	**TX91G2837250Q0**		
AMFM	**STEREO/NICAM**		**20684420**
CRT	**CRTTX9121"**	**R**	**20532040**
KB	**KDB907**		**25285380**
SCI	**SCARTTX91**		**20335250**

FP23,70	MP160	⚠	10457130
FP90	MP125	⚠	10469180
GR01	TFMK1330T		10132410
IC01	TDA4665T FLAT		10155740
IE01	M51320P		20321730
IE02	MC14053BCP		46006700
IF01	TDA1771		10044490
II01	STV8224A2		10451330
IN01	U4454B		50896820
IN03	TDA7263		10281150
IN04	MC78L08ACP		10308410
IN05	MN1381-S		10284050
IN20	MSP3410B-PP-F7		10372340
IN50	MC33164P-5		10277030
IR01	ST9293J9B1/HAK		20801180
IR02	TDA8139		10044580
IR03	ST24C04/B1		10030300
IT01	TEA5101B		10231440
IV01	STV2118B (CUT 5.1)		10384680
IX01	SAA5281ZP/E		10258810
IX02	MC7805/CT		46025200

TA06,**TF**21, **TI**32,**TK**02, **TR**01,04,05	BC847B SMD	11070770
TE01,03,04,05, **TN**06,**TX**01	BC558B	16001110
TE02,06,**TR**02	BC548B	16000930
TH02,**TL**01, **TN**04,07,**TP**22	BC337-40	45001466
TI01	MMBTH10L SMD	16006500
TI31,**TV**01	BC857B SMD	30946660
TL02	BUH515D	20666700
TL13	2SC2236Y	16000220
TN01	BF799 SMD	16005860
TN05	BC848B SMD	16006290
TN08	BC858B SMD	16006330
TP20	BUL512HI	10440310
TP23	MPS750	16001340
TP34	BC858C SMD	50854683
TX02	BC548C	16000940

DC01,**DP**34, **DR**07	BZX55C5V1	80444140
DE01,**DF**22, **DK**08,**DL**01,11, 20,23,**DP**25, **DR**05,**DT**21,41, 61,**DV**01,02,03, **DX**01,02,03,04	1N4148	44009209
DF01,**DL**07,08	1N4001	16008160
DF03,04	BZX55C11	11073670
DF21	BZX55C20	30948810
DH01	BZX55C30	80444170
DH02	BZX55C5V6/ZPD5,6	44025401
DK07	BZX55C6V8	50890650
DL02,04,05,06, 09,**DP**19,23,31, 32	RGP10G	10459090
DL12	BZX55B4V3	90578000
DL13	BZX55B9V1	70438220
DL21	ZPD6,8	44074501
DN03,04	BAV203 SMD	10222420
DN05	BZX55C9V1	90578100
DP01,02,03,04	BYW27-1000	10455390
DP29,37,38	LL4148 SMD	16012450
DP33	BZX85C27/ZPY27	10246740
DP70,90	RGP15G	10272800
DP80	STTB406	20768390
DR01	BZX55B13	50890560
DR04,**DT**01	ZPD8,2	44021504
DT23,43,63	BAV21	44044407
GE01	MV5491A LED	10036730



FN01	K9260M FOS	20232110
QC01	4M433619HZ	10087710
QC02	3M579545HZ	10087720
QI01	OFWG3965M FOS	10085120
QI31	6M0HZ	48042300
QN01	18M432HZ	10254070
QN10	18M432HZ	10334670
QR01	8M0HZ	10254430
QV01	503K0HZ	48023700
QX01	27M0HZ	20548370

FN03	31M9HZ	20498110
LI29	38M9HZ	10388320
LN01	38M9HZ	47309700

PI01	10K0 OHM	20351320
PP34	470R0 OHM	10260350

RE35	10R0 OHM 5% 0,30W		41005202
RF01	2R2 OHM 5% 0,30W	⚠	15009870
RF05	1R8 OHM 5% 0,50W		20649310
RF09	110K0 OHM 1% 0,25W		11061210
RH16,**RN**33,35, 46	10R0 OHM 5% 0,25W	⚠	15009580
RH17,**RX**01	27R0 OHM 5% 0,25W	⚠	15009840
RL07	1K0 OHM 10% 0,50W	⚠	10226290
RL08	33R0 OHM 5% 2W		15022830
RL09	8R2 OHM 10% 7W		70432630
RL11	15R0 OHM 5% 0,50W	⚠	10226280
RL12	0R47 OHM 5% 0,35W	⚠	10344260
RL13,14	0R22 OHM 5% 0,50W	⚠	10305450
RL16	82K0 OHM 1% 0,70W		10148310
RL22	75K0 OHM 1% 0,70W		10224620
RN37,38	4R7 OHM 5% 0,30W		15010020
RP01	5R1 OHM 10% 2,50W		10472390

R : RECYCLED PART
: PIECE RECYCLEE
: AUSTAUSCHTEILE
: RICAMBIO RICICLATO
: MODULO REPROCESADO

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RP02	25R0 OHM 220V PTC	⚠	30093400
RP15	10M0 OHM 5% 0,70W	⚠	10074320
RP20	1R0 OHM 5% 2,50W		10383240
RP44	1R0 OHM 5% 0,25W	⚠	15009730
RT01	47R0 OHM 5% 0,30W	⚠	15010010
RT02	15R0 OHM 5% 2W		13001350
RT03	10K0 OHM 5% 0,50W		40434960
RT23,43	68K0 OHM 5% 1W		10133770
RT25,45,65	2K2 OHM 5% 0,50W		30938220
RT48	2K2 OHM 5% 0,30W	⚠	41319509
RV02	56R0 OHM 5% 0,30W	⚠	15010060

CL04	7N2F 3,5% 1K6V		20153470
CL05	470N0F 5% 250V		43044300
CL08	6N8F 5% 400V		10158380
CL10,15	330P0F 20% 1K0V		14035270
CL17,**CP**13,91	330P0F 20% 400V		14002220
CP01,02	100N0F 20% 275V	⚠	10331520
CP03	68N0F 20% 250V	⚠	10256210
CP04	10N0F 20% 400V		13028200
CP05,06	4N7F 1K0V		10058740
CP10	100U0F 385V		30662900
CP15	1N0F 20% 400V	⚠	43106800
CP21	1N0F 10% 1K0V		43441400
CP24	10N0F 10% 100V		10279180
CP71	2N2F 10% 400V		10188880
CP79	470P0F 10% 3K0V		14006050
CT03	2N2F 2K0V		14036020

LL01	DRIVER		20609540
LL03		⚠	80367500
LL05	DSTL28	⚠	10462780
LP02		⚠	10395160
LP03	SMT17	⚠	10387120

OTHER PARTS
AUTRES PIECES
SONSTIGE TEILE
ALTRE PARTI
OTRAS PIEZAS

BE01,02	SCART SOCKET PRISE PERITEL EURO-AV-BUCHSE EUROPRESA NORMALIZZATA EUROCONECTOR		10357750
BT01	CATHODE RAY TUBE SOCKET SUPPORT TUBE CATHODIQUE BILDROEHRENFASSUNG SUPPORTO TUBO CATODICO SOPORTE T.R.C	⚠	20631370
FP01	1A6T TIME-LAG FUSE 1A6T FUSIBLE TEMPORISE 1A6T SICHERUNG 1A6T FUSIBILE TEMPORIZZATO 1A6T FUSIBLE TEMPORIZADO	⚠	48064700
NH01	CTT5000 UHF/VHF TUNER CTT5000 TETE UHF/VHF CTT5000 UHF/VHF TUNER CTT5000 TUNER UHF/VHF CTT5000 SINTONIZADOR UHF/VHF	R	20546960
SM01,02,03,04	MICROSWITCH MICRO CONTACTEUR MIKROSCHALTER MICROINTERRUTTORE MICROCONTACTOR		30011100
SP01	ON/OFF SWITCH CONTACTEUR MARCHE/ARRET EIN-AUS SCHALTER CONTATTORE ACCESO/SPENTO CONTACTOR MARCHA/PARADA	⚠	10175910

EQUIPMENT/PRESENTATION
EQUIPEMENT/PRESENTATION
AUSRUESTUNG/GEHAEUSE
PARTI VARIE
EQUIPO/PRESENTACION

FRONT PANEL FACADE FRONTPLATTE PANNELLO FRONTALE PANEL FRONTAL		25221520
REAR PANEL DOS RUECKWAND PANNELLO POSTERIORE TAPA POSTERIOR	⚠	25184660
16R OHM 5W LOUDSPEAKER 50X90 16R OHM 5W HAUT PARLEUR 50X90 16R OHM 5W LAUTSPRECHER 50X90 16R OHM 5W ALTOPARLANTE 50X90 16R OHM 5W ALTAVOZ 50X90		10317070
ON/OFF BUTTON TOUCHE MARCHE/ARRET EIN-AUS TASTE TASTO ACCESO SPENTO TECLA MARCHA PARADA		25172290
BUTTON STRIP BARRETTE DE TOUCHES TASTENLEISTE PIATTINA TASTI PLACA DE TECLAS		25158380
POWER SUPPLY LEAD CORDON D'ALIMENTATION NETZKABEL CAVO DI ALIMENTAZIONE CABLE DE ALIMENTACION	⚠	10260810
A51EBV13X01 CATHODE RAY TUBE A51EBV13X01 TUBE CATHODIQUE A51EBV13X01 FARBBILDROEHRE A51EBV13X01 TUBO CATODICO A51EBV13X01 T.R.C	⚠	10318920
DEGAUSSING COIL BOBINE DE DEMAGNETISATION ENTMAGNETISIERUNGSSPULE BOBINA DI SMAGNETIZZAZIONE BOBINA DE DESIMANTACION	⚠	47320195
F3090 REMOTE CONTROL F3090 TELECOMMANDE F3090 FERNBEDIENUNG F3090 TELECOMANDO F3090 TELEMANDO		10348550
FOLDING BOX EMBALLAGE CARTON KARTON IMBALLAGGIO CARTONE EMBALAJE CARTON		25196040
FITTING DOWNER CALE INFERIEURE POLSTER UNTEN DISTANZIATORE INFERIORE CALZO INFERIOR		25158410
FITTING UPPER CALE SUPERIEURE POLSTER OBEN DISTANZIATORE SUPERIORE CALZO SUPERIOR		25158400

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V51NB PARTS LIST V51NB LISTE DE PIECES DETACHEES V51NB ERSATZTEILLISTE V51NB LISTA PARTI DI RICAMBIO V51NB LISTA DE PIEZAS DE REPUESTO	35044760
TX91G SERVICE MANUAL (EUROPE) TX91G DOC TECHNIQUE (EUROPE) TX91G TECHNISCHE DOKUMENTATION (EUROPE) TX91G DOCUMENTAZIONE TECNICA (EUROPE) TX91G DOCUMENTACION TECNICA (EUROPE)	35041190
T5173GF/V51NB UM FERGUSON GB T5173GF/V51NB NU FERGUSON GB T5173GF/V51NB BA FERGUSON GB T5173GF/V51NB IU FERGUSON GB T5173GF/V51NB IU FERGUSON GB	25292000

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PARTS LIST
LISTE PIECES DETACHEES
ERSATZTEILLISTE
LISTA PARTI DI RICAMBIO
LISTA DE PIEZAS DE REPUESTO

THOMSON
14MS70CT
Chassis TX91G

MODULES

MAIN	**TX91G14"MPBPSBGHILL'**	
DVT	**DVTTX91G**	**20525850**
FCB	**FCBTX91G14"**	**20750610**

FP23,70	MP160	⚠ 10457130
FP90	MP125	⚠ 10469180
IA01	TDA7253	20203120
IC01	TDA4665	20335750
IF01	TDA1771	10044490
II01	STV8224A2	10451330
II02	STV8225	20165170
IK01	TFMK1330T	10132410
IR01	ST9293J9B1/HAI FM20A	20801170
IR02	TDA8139	10044580
IR03	ST24C04/B1	10030300
IV01	STV2118B (CUT 5.1)	10384680
IX01	SAA5281ZP/E	10258810
IX02	MC7805/CT	46025200

TA05,06,**TF**21, **TI**28,32,**TK**02, **TR**01,04,05	BC848B SMD	35030590
TH02	BC338-40	16000590
TI01	MMBTH10L SMD	16006500
TI03,04,30	DTC144EK SMD	16007030
TI31,**TV**01,02	BC858B SMD	16006330
TL01,**TP**22	BC337-40	45001466
TL02	BUH515D	20666700
TL13	2SC2236Y	16000220
TP20	BUL512HI	10440310
TP23	MPS750	16001340
TP34	BC858C SMD	50854683
TR02	BC548B	16000930
TT51,61,71	BF423	16003110
TT52,62,72	BF883S	10162190
TT81	BC807-40 SMD	16006220
TX01	BC558B	16001110
TX02	BC548C	16000940

DA05	BZX55B2V7	80444010
DC01,**DP**34, **DR**07	BZX55C5V1	80444140
DF01,**DL**07,08	1N4001	16008160
DF03,04	BZX55C11	11073670
DF21	BZX55C15	20475420
DF22,**DI**62, **DK**08,**DL**01,11, 20,23,**DP**25, **DR**05,**DT**50,60, 70,86,**DV**01,02, 03,**DX**01,02,03, 04	1N4148	44009209
DH01	BZX55C30	80444170
DH02	BZX55C5V6/ZPD5,6	44025401
DI33,34,50,51, 52,60	BA282	16007510
DK01	MV5491A LED	10036730
DK07	BZX55C6V8	50890650
DL02,04,05,06, **DP**19,23,31,32	RGP10G	10459090
DL12	BZX55B4V3	90578000
DL13	BZX55B9V1	70438220
DL21	ZPD6,8	44074501
DP01,02,03,04	BYW27-1000	10455390
DP29,37,38	LL4148 SMD	16012450
DP33	BZX85C27/ZPY27	10246740
DP70,90	RGP15G	10272800
DP80	BYW76	16009120
DR01	BZX55B13	50890560
DR04,**DT**85	ZPD8,2	44021504
DT51,61,71	BAV21	44044407
DV04	BZX55B8V2	40441820

QC01	4M433619HZ	10087710
QC02	3M579545HZ	10087720
QI01	OFWG1967M FOS	10247670
QI02	33M9HZ FOS	20489330
QI31	6M0HZ	48042300
QI32	5M5HZ	20336430
QI33	6M0HZ	48039700
QI34	5M74HZ	20338170
QR01	8M0HZ	10254430
QV01	503K0HZ	48023700
QX01	27M0HZ	20548370

LI29	38M9HZ	20310930
LI61	32M4HZ	20510040

PI01	10K0 OHM	20115670
PP34	470R0 OHM	10260350

RA25	1R0 OHM 5% 2W	20544230
RA26	470R0 OHM 5% 0,25W	15009980
RE12,**RR**20, **RT**68,**RV**04,06, 08,10	100R0 OHM 5% 0,25W	30943330
RF05	1R8 OHM 5% 0,50W	20649310
RF09	100K0 OHM 1% 0,25W	50883810
RH16	10R0 OHM 5% 0,25W	⚠ 15009580
RH17,**RX**01	27R0 OHM 5% 0,25W	⚠ 15009840
RL07	1K0 OHM 10% 0,50W	⚠ 10226290
RL08	33R0 OHM 5% 2W	15022830
RL09	8R2 OHM 10% 7W	70432630
RL11	15R0 OHM 5% 0,50W	⚠ 10226280
RL12,13	0R56 OHM 5% 0,50W	⚠ 10313110
RL16,22	82K0 OHM 1% 0,70W	10148310
RP01	5R1 OHM 10% 5W	20369640
RP02	25R0 OHM 220V PTC	⚠ 30093400
RP15	10M0 OHM 5% 0,70W	⚠ 20564520
RP20	1R0 OHM 5% 2,50W	10383240
RP44	1R0 OHM 5% 0,25W	⚠ 15009730
RR17	1K0 OHM 5% 0,25W	15006730
RT52,62,72	10K0 OHM 10% 2W	15022700
RV02	56R0 OHM 5% 0,30W	⚠ 15010060

CL04	7N0F 3,5% 1K5V	43326700

R : RECYCLED PART
: PIECE RECYCLEE
: AUSTAUSCHTEILE
: RICAMBIO RICICLATO
: MODULO REPROCESADO

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CL05	390N0F 10% 250V		43171400
CL06	680N0F 20% 160V		13076980
CL08	6N8F 5% 400V		10158380
CL09	1U0F 10% 160V	⚠	20706480
CL10,15	330P0F 20% 1K0V		14035270
CL17,**CP**13,91	330P0F 20% 400V		14002220
CL18	270P0F 10% 2K0V		14036000
CP01,02	100N0F 20% 275V	⚠	10331520
CP03	68N0F 20% 250V		10256210
CP04	10N0F 20% 400V		10094420
CP05,06	4N7F 1K0V		10058740
CP10	100U0F 385V		30662900
CP15	1N0F 20% 400V	⚠	20822690
CP21	1N0F 10% 1K0V	⚠	43441400
CP24	10N0F 10% 100V		10279180
CP71	2N2F 10% 400V		10188880
CP79	470P0F 10% 3K0V		14006050
CT82	2U2F 20% 250V		10190240
CT84	10N0F 20% 400V		14033040
CT85	1N0F 2K0V		14034870

LL01	DRIVER		20609540
LL03		⚠	30909908
LL05	FCV1410E18	⚠	20202880
LP02		⚠	10395160
LP03	SMT17	⚠	10387120

OTHER PARTS
AUTRES PIECES
SONSTIGE TEILE
ALTRE PARTI
OTRAS PIEZAS

BE01	SCART SOCKET PRISE PERITEL EURO-AV-BUCHSE EUROPRESA NORMALIZZATA EUROCONECTOR		67523300
BE01	HEADPHONE SOCKET PRISE CASQUE KOPFHOERERBUCHSE PRESA JACK TOMA JACK		20561540
BE04	CINCH SOCKET PRISE CINCH CINCH-BUCHSE PRESA CINCH TOMA CINCH		10337850
BE05	CINCH SOCKET PRISE CINCH CHINCH-BUCHSE PRESA CINCH TOMA CINCH		20483820
BT01	CATHODE RAY TUBE SOCKET SUPPORT TUBE CATHODIQUE BILDROEHRENFASSUNG SUPPORTO TUBO CATODICO SOPORTE T.R.C	⚠	20174620
FP01	1A6T TIME-LAG FUSE 1A6T FUSIBLE TEMPORISE 1A6T SICHERUNG 1A6T FUSIBILE TEMPORIZZATO 1A6T FUSIBLE TEMPORIZADO	⚠	48064700
NH01	CTT5000T UHF/VHF TUNER CTT5000T TETE UHF/VHF CTT5000T UHF/VHF TUNER CTT5000T TUNER UHF/VHF CTT5000T SINTONIZADOR UHF/VHF	R	20808880
SK01,02,03,04	MICROSWITCH MICRO CONTACTEUR MIKROSCHALTER MICROINTERRUTORE MICROCONTACTOR		10510600
SP05	ON/OFF SWITCH CONTACTEUR MARCHE/ARRET EIN-AUS SCHALTER CONTATTORE ACCESO/SPENTO CONTACTOR MARCHA/PARADA	⚠	20612390

EQUIPMENT/PRESENTATION
EQUIPEMENT/PRESENTATION
AUSSTATTUNG/GEHAEUSE
PARTI VARIE
EQUIPO/PRESENTACION

POWER SUPPLY LEAD CORDON D'ALIMENTATION NETZKABEL CAVO DI ALIMENTAZIONE CABLE DE ALIMENTACION		⚠	20351830
16R OHM 3W LOUDSPEAKER 40X70 16R OHM 3W HAUT PARLEUR 40X70 16R OHM 3W LAUTSPRECHER 40X70 16R OHM 3W ALTOPARLANTE 40X70 16R OHM 3W ALTAVOZ 40X70			2041186A
370KRB22-TC38 CATHODE RAY TUBE 370KRB22-TC38 TUBE CATHODIQUE 370KRB22-TC38 FARBBILDROEHRE 370KRB22-TC38 TUBO CATODICO 370KRB22-TC38 T.R.C		⚠	11006933
CABINET WITH FRONT PANEL COFFRET EQUIPE AVEC FACADE GEHAEUSE KPL MIT FRONTPLATTE MOBILE COMPLETO MUEBLE EQUIPADO			20770420
BUTTON STRIP BARRETTE DE TOUCHES TASTENLEISTE ASSIEME TASTI PLACA DE TECLAS			20770380
ON/OFF BUTTON TOUCHE MARCHE/ARRET EIN-AUS TASTE TASTO ACCESO/SPENTO TECLA MARCHA/PARADA			20770340
REAR PANEL DOS RUECKWAND PANNELLO POSTERIORE TAPA POSTERIOR		⚠	20770450
TELESCOPIC ANTENNA ANTENNE TELESCOPIQUE TELESKOPANTENNE ANTENNA TELESCOPICA ANTENA TELESCOPICA			40290100
FITTING UPPER CALE SUPERIEURE POLSTER OBEN DISTANZIATORE SUPERIORE CALZO SUPERIOR			20770160
FITTING DOWNER CALE INFERIEURE POLSTER UNTEN DISTANZIATORE INFERIORE CALZO INFERIOR			20770240
FOLDING BOX EMBALLAGE CARTON KARTON IMBALLAGGIO CARTONE EMBALAJE CARTON			20866340
DEGAUSSSING COIL BOBINE DE DEMAGNETISATION ENTMAGNETISIERUNGSSPULE BOBINA DI SMAGNETIZZAZIONE BOBINA DE DESIMANTACION		⚠	20613360

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14MS70CT PARTS LIST 14MS70CT LISTE DE PIECES DETACHEES 14MS70CT ERSATZTEILLISTE 14MS70CT LISTA PARTI DI RICAMBIO 14MS70CT LISTA DE PIEZAS DE REPUESTO		35051860
TX91G SERVICE MANUAL (EUROPE) TX91G DOC TECHNIQUE (EUROPE) TX91G TECHNISCHE DOKUMENTATION (EUROPE) TX91G DOCUMENTAZIONE TECNICA (EUROPE) TX91G DOCUMENTACION TECNICA (EUROPE)		35041190
14MS70CT UM THOMSON F 14MS70CT NU THOMSON F 14MS70CT BA THOMSON F 14MS70CT IU THOMSON F 14MS70CT IU THOMSON F		20735320

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PARTS LIST
LISTE PIECES DETACHEES
ERSATZTEILLISTE
LISTA PARTI DI RICAMBIO
LISTA DE PIEZAS DE REPUESTO

THOMSON
14MS76CT
Chassis TX91G

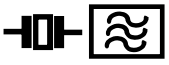
MODULES

MAIN	**TX91G14"MPBPSBGDKK'**	
DVT	**DVTTX91G**	**20525850**
FCB	**FCBTX91G14"**	**20750610**

FP23,70	MP160	⚠ 10457130
FP90	MP125	⚠ 10469180
IA01	TDA7253	20203120
IC01	TDA4665	20335750
IF01	TDA1771	10044490
II01	STV8224A2	10451330
IK01	TFMK1330T	10132410
IR01	ST9293J9B1/HAI FM20A	20801170
IR02	TDA8139	10044580
IR03	ST24C04/B1	10030300
IV01	STV2118B (CUT 5.1)	10384680
IX01	SAA5281ZP/E	10258810
IX02	MC7805/CT	46025200

TA05,06,**TF**21, **TI**02,32,**TK**02, **TR**01,04,05	BC848B SMD	35030590
TH02	BC338-40	16000590
TI01	MMBTH10L SMD	16006500
TI30	DTC144EK SMD	16007030
TI31,**TV**01,02	BC858B SMD	16006330
TL01,**TP**22	BC337-40	45001466
TL02	BUH515D	20666700
TL13	2SC2236Y	16000220
TP20	BUL512HI	10440310
TP23	MPS750	16001340
TP34	BC858C SMD	50854683
TR02	BC548B	16000930
TT51,61,71	BF423	16003110
TT52,62,72	BF883S	10162190
TT81	BC807-40 SMD	16006220
TX01	BC558B	16001110
TX02	BC548C	16000940

DA05	BZX55B2V7	80444010
DC01,**DP**34, **DR**07	BZX55C5V1	80444140
DF01,**DL**07,08	1N4001	16008160
DF03,04	BZX55C11	11073670
DF21	BZX55C15	20475420
DF22,**DK**08, **DL**01,11,20,23, **DP**25,**DR**05, **DT**50,60,70,86, **DV**01,02,03, **DX**01,02,03,04	1N4148	44009209
DH01	BZX55C30	80444170
DH02	BZX55C5V6/ZPD5,6	44025401
DI33,34,60	BA282	16007510
DK01	MV5491A LED	10036730
DK07	BZX55C6V8	50890650
DL02,04,05,06, **DP**19,23,31,32	RGP10G	10459090
DL12	BZX55B4V3	90578000
DL13	BZX55B9V1	70438220
DL21	ZPD6,8	44074501
DP01,02,03,04	BYW27-1000	10455390
DP29,37,38	LL4148 SMD	16012450
DP33	BZX85C27/ZPY27	10246740
DP70,90	RGP15G	10272800
DP80	BYW76	16009120
DR01	BZX55B13	50890560
DR04,**DT**85	ZPD8,2	44021504
DT51,61,71	BAV21	44044407
DV04	BZX55B8V2	40441820



QC01	4M433619HZ	10087710
QC02	3M579545HZ	10087720
QI01	K2955M FOS	20258810
QI31	6M5HZ	20356510
QI32	5M5HZ	20336430
QI33	6M5HZ	20356470
QI34	5M74HZ	20338170
QR01	8M0HZ	10254430
QV01	503K0HZ	48023700
QX01	27M0HZ	20548370

LI29	38M9HZ	20310930
LI61	29M65HZ	20382370

PI01	10K0 OHM	20115670
PP34	470R0 OHM	10260350

RA25	1R0 OHM 5% 2W	20544230
RA26	470R0 OHM 5% 0,25W	⚠ 15009980
RE12,**RR**20, **RT**68,**RV**04,06, 08,10	100R0 OHM 5% 0,25W	30943330
RF05	1R8 OHM 5% 0,50W	20649310
RF09	100K0 OHM 1% 0,25W	50883810
RF16	1K0 OHM 5% 0,25W	⚠ 15006730
RH16	10R0 OHM 5% 0,25W	⚠ 15009580
RH17,**RX**01	27R0 OHM 5% 0,25W	⚠ 15009840
RL07	1K0 OHM 10% 0,50W	⚠ 10226290
RL08	33R0 OHM 5% 2W	15022830
RL09	8R2 OHM 10% 7W	70432630
RL11	15R0 OHM 5% 0,50W	⚠ 10226280
RL12,13	0R56 OHM 5% 0,50W	⚠ 10313110
RL16,22	82K0 OHM 1% 0,70W	10148310
RP01	5R1 OHM 10% 5W	20369640
RP02	25R0 OHM 220V PTC	⚠ 30093400
RP15	10M0 OHM 5% 0,70W	⚠ 20564520
RP20	1R0 OHM 5% 2,50W	10383240
RP44	1R0 OHM 5% 0,25W	⚠ 15009730
RT52,62,72	10K0 OHM 10% 2W	15022700
RV02	56R0 OHM 5% 0,30W	⚠ 15010060

CL04	7N0F 3,5% 1K5V	43326700
CL05	390N0F 10% 250V	43171400
CL06	680N0F 20% 160V	13076980
CL08	6N8F 5% 400V	10158380
CL09	1U0F 10% 160V	⚠ 20706480

R : RECYCLED PART
: PIECE RECYCLEE
: AUSTAUSCHTEILE
: RICAMBIO RICICLATO
: MODULO REPROCESADO

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CL10,15	330P0F 20% 1K0V		14035270
CL17,**CP**13,91	330P0F 20% 400V		14002220
CL18	270P0F 10% 2K0V		14036000
CP01,02	100N0F 20% 275V	⚠	10331520
CP03	68N0F 20% 250V		10256210
CP04	10N0F 20% 400V		10094420
CP05,06	4N7F 1K0V		10058740
CP10	100U0F 385V		30662900
CP15	1N0F 20% 400V	⚠	20822690
CP21	1N0F 10% 1K0V	⚠	43441400
CP24	10N0F 10% 100V		10279180
CP71	2N2F 400V		10078890
CP79	470P0F 10% 3K0V		14006050
CT82	2U2F 20% 250V		10190240
CT84	10N0F 20% 400V		14033040
CT85	1N0F 2K0V		14034870

LL01	DRIVER		20609540
LL03		⚠	30909908
LL05	FCV1410E18	⚠	20202880
LP02		⚠	10395160
LP03	SMT17	⚠	10387120

OTHER PARTS
AUTRES PIECES
SONSTIGE TEILE
ALTRE PARTI
OTRAS PIEZAS

BE01	SCART SOCKET PRISE PERITEL EURO-AV-BUCHSE EUROPRESA NORMALIZZATA EUROCONECTOR	67523300
BE01	HEADPHONE SOCKET PRISE CASQUE KOPFHOERERBUCHSE PRESA JACK TOMA JACK	20561540
BE04	CINCH SOCKET PRISE CINCH CHINCH-BUCHSE PRESA CINCH TOMA CINCH	10337850
BE05	CINCH SOCKET PRISE CINCH CHINCH-BUCHSE PRESA CINCH TOMA CINCH	20483820
BT01	CATHODE RAY TUBE SOCKET SUPPORT TUBE CATHODIQUE BILDROEHRENFASSUNG SUPPORTO TUBO CATODICO SOPORTE T.R.C	⚠ 20174620
FP01	1A6T TIME-LAG FUSE 1A6T FUSIBLE TEMPORISE 1A6T SICHERUNG 1A6T FUSIBILE TEMPORIZZATO 1A6T FUSIBLE TEMPORIZADO	⚠ 48064700
NH01	CTT5000T UHF/VHF TUNER CTT5000T TETE UHF/VHF CTT5000T UHF/VHF TUNER CTT5000T TUNER UHF/VHF CTT5000T SINTONIZADOR UHF/VHF	R 20808880
SK01,02,03,04	MICROSWITCH MICRO CONTACTEUR MIKROSCHALTER MICROINTERRUTORE MICROCONTACTOR	10510600
SP05	ON/OFF SWITCH CONTACTEUR MARCHE/ARRET EIN-AUS SCHALTER CONTATTORE ACCESO/SPENTO CONTACTOR MARCHA/PARADA	⚠ 20612390

EQUIPMENT/PRESENTATION
EQUIPEMENT/PRESENTATION
AUSSTATTUNG/GEHAEUSE
PARTI VARIE
EQUIPO/PRESENTACION

POWER SUPPLY LEAD CORDON D'ALIMENTATION NETZKABEL CAVO DI ALIMENTAZIONE CABLE DE ALIMENTACION	⚠ 20351830
16R OHM 3W LOUDSPEAKER 40X70 16R OHM 3W HAUT PARLEUR 40X70 16R OHM 3W LAUTSPRECHER 40X70 16R OHM 3W ALTOPARLANTE 40X70 16R OHM 3W ALTAVOZ 40X70	2041186A
370KRB22-TC38 CATHODE RAY TUBE 370KRB22-TC38 TUBE CATHODIQUE 370KRB22-TC38 FARBBILDROEHRE 370KRB22-TC38 TUBO CATODICO 370KRB22-TC38 T.R.C	⚠ 11006933
FRONT PANEL FACADE FRONTPLATTE PANNELLO FRONTALE PANEL FRONTAL	20770420
BUTTON STRIP BARRETTE DE TOUCHES TASTENLEISTE ASSIEME TASTI PLACA DE TECLAS	20770380
ON/OFF BUTTON TOUCHE MARCHE/ARRET EIN-AUS TASTE TASTO ACCESO/SPENTO TECLA MARCHA/PARADA	20770340
REAR PANEL DOS RUECKWAND PANNELLO POSTERIORE TAPA POSTERIOR	⚠ 20770450
TELESCOPIC ANTENNA ANTENNE TELESCOPIQUE TELESKOPANTENNE ANTENNA TELESCOPICA ANTENA TELESCOPICA	40290100
FITTING UPPER CALE SUPERIEURE POLSTER OBEN DISTANZIATORE SUPERIORE CALZO SUPERIOR	20770160
FITTING DOWNER CALE INFERIEURE POLSTER UNTEN DISTANZIATORE INFERIORE CALZO INFERIOR	20770240
FOLDING BOX EMBALLAGE CARTON KARTON IMBALLAGGIO CARTONE EMBALAJE CARTON	20866340
RCT3003 REMOTE CONTROL RCT3003 TELECOMMANDE RCT3003 FERNBEDIENUNG RCT3003 TELECOMANDO RCT3003 TELEMANDO	10292960
DEGAUSSSING COIL BOBINE DE DEMAGNETISATION ENTMAGNETISIERUNGSSPULE BOBINA DI SMAGNETIZZAZIONE BOBINA DE DESIMANTACION	⚠ 20613360

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14MS76CT PARTS LIST 14MS76CT LISTE DE PIECES DETACHEES 14MS76CT ERSATZTEILLISTE 14MS76CT LISTA PARTI DI RICAMBIO 14MS76CT LISTA DE PIEZAS DE REPUESTO	35052820
TX91G SERVICE MANUAL (EUROPE) TX91G DOC TECHNIQUE (EUROPE) TX91G TECHNISCHE DOKUMENTATION (EUROPE) TX91G DOCUMENTAZIONE TECNICA (EUROPE) TX91G DOCUMENTACION TECNICA (EUROPE)	35041190
14MS76CT UM TH D/I/DK/S/GB/E/P/GR/PL/H/CZ 14MS76CT NU TH D/I/DK/S/GB/E/P/GR/PL/H/CZ 14MS76CT BA TH D/I/DK/S/GB/E/P/GR/PL/H/CZ 14MS76CT IU TH D/I/DK/S/GB/E/P/GR/PL/H/CZ 14MS76CT IU TH D/I/DK/S/GB/E/P/GR/PL/H/CZ	20722980

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THOMSON MULTIMEDIA 46, Quai Alphonse Le Gallo 92648 Boulogne Cedex FRANCE

THOMSON MULTI MEDIA

TV

Brandt FERGUSON NORDMENDE SABA TELEFUNKEN THOMSON

PARTS LIST
LISTE PIECES DETACHEES
ERSATZTEILLISTE
LISTA PARTI DI RICAMBIO
LISTA DE PIEZAS DE REPUESTO

SABA
M5570GF
Chassis TX91G

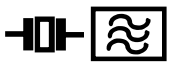
MODULES

MAIN	**TX91G3830250Q0**		
AMFM	**STEREO/NICAM**	**R**	**20684400**
CRT	**CRTTX9114"**	**R**	**20590240**
KDB	**KDB910**		**25298770**
SCI	**SCARTTX91**		**20335250**

FP23,70	MP160	⚠	10457130
FP90	MP125	⚠	10469180
GR001	TFMK1330T		10132410
IC01	TDA4665T FLAT		10155740
IE01	M51320P		20321730
IE02	MC14053BCP		46006700
IF01	TDA1771		10044490
II01	STV8224A2		10451330
II02	STV8225		20165170
IN01	U4454B		50896820
IN020	MSP3410B-PP-F7		10372340
IN03	TDA7263		10281150
IN04	MC78L08ACP		10308410
IN050	MC33164P-5		10277030
IR01	ST9293J9B1/HAK		20801180
IR02	TDA8139		10044580
IR03	ST24C04/B1		10030300
IT01	TEA5101B		10231440
IV01	STV2118B (CUT 5.1)		10384680
IX01	SAA5281ZP/E		10258810
IX02	MC7805/CT		46025200

TA06,**TF**21, **TI**28,32,**TK**02, **TR**01,04,05	BC847B SMD		11070770
TE01,03,04,05, **TN**06,**TX**01	BC558B		16001110
TE02,06,**TR**02	BC548B		16000930
TH02,**TL**01, **TN**04,07,**TP**22	BC337-40		45001466
TI01	MMBTH10L SMD		16006500
TI03,04	DTC144EK SMD		16007030
TI31,**TV**01	BC857B SMD		30946660
TL02	BUH515D		20666700
TL13	2SC2236Y		16000220
TN01	BF799 SMD		35031670
TN05	BC848B SMD		16006290
TN08	BC858B SMD		16006330
TP20	BUL512HI		10440310
TP23	MPS750		16001340
TP34	BC858C SMD		50854683
TX02	BC548C		16000940

DC01,**DP**34, **DR**07	BZX55C5V1		80444140
DE01,**DF**22, **DI**62,**DK**08, **DL**01,11,20,23, **DP**25,**DR**05, **DT**21,41,61, **DV**01,02,03, **DX**01,02,03,04	1N4148		44009209
DF01,**DL**07,08	1N4001		16008160
DF03,04	BZX55C11		11073670
DF21	BZX55C20		30948810
DH01	BZX55C30		80444170
DH02	BZX55C5V6/ZPD5,6		44025401
DI50,51,52,60	BA282		16007510
DK07	BZX55C6V8		50890650
DL02,04,05,06, 09,**DP**19,23,31, 32	RGP10G		10459090
DL12	BZX55B4V3		90578000
DL13	BZX55B9V1		70438220
DL21	ZPD6,8		44074501
DN03,04	BAV103 SMD		10155030
DN05	BZX55C9V1		90578100
DP01,02,03,04	BYW27-1000		10455390
DP29,37,38	LL4148 SMD		16012450
DP33	BZX85C27/ZPY27		10246740
DP70,90	RGP15G		10272800
DP80	STTB406		20768390
DR01	BZX55B13		50890560
DR04,**DT**01	ZPD8,2		44021504
DT23,43,63	BAV21		44044407
GE001	MV5491A LED		10036730



FN010	TSB5304 FOS		80138400
FN02	6M5HZ		20356510
QC01	4M433619HZ		10087710
QC02	3M579545HZ		10087720
QI01	OFWG3965M FOS		10085120
QI02	33M9HZ FOS		20489330
QI31	6M0HZ		48042300
QI34	5M74HZ		20338170
QN010	18M432HZ		10334670
QR01	8M0HZ		10254430
QV01	503K0HZ		48023700
QX01	27M0HZ		20548370

FN93	31M9HZ		20498110
LI29	38M9HZ		10388320
LI61	32M4HZ		2031091A
LN01	38M9HZ		47309700

PI01	10K0 OHM		20351320
PP34	470R0 OHM		10260350

RE35,**RH**16	10R0 OHM 5% 0,25W	⚠	15009580
RF09	110K0 OHM 1% 0,25W		11061210
RH17,**RX**01	27R0 OHM 5% 0,25W	⚠	15009840
RL07	1K0 OHM 10% 0,50W	⚠	10226290
RL08	33R0 OHM 5% 2W		15022830
RL09	8R2 OHM 10% 7W		70432630
RL11	15R0 OHM 5% 0,50W	⚠	10226280
RL12	0R47 OHM 5% 0,35W	⚠	10344260
RL13,14	0R22 OHM 5% 0,50W	⚠	10305450
RL16	82K0 OHM 1% 0,70W		10148310
RL22	75K0 OHM 1% 0,70W		10224620
RN33,35,46	12R0 OHM 5% 0,25W	⚠	41023700
RN37,38	4R7 OHM 5% 0,25W	⚠	35032200
RP01	5R1 OHM 10% 2,50W		10472390

R : RECYCLED PART
: PIECE RECYCLEE
: AUSTAUSCHTEILE
: RICAMBIO RICICLATO
: MODULO REPROCESADO

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RP02	25R0 OHM 220V PTC	⚠	30093400
RP15	10M0 OHM 5% 0,70W	⚠	10074320
RP20	1R0 OHM 5% 2,50W		10383240
RP44	1R0 OHM 5% 0,25W	⚠	15009730
RT01	47R0 OHM 5% 0,30W	⚠	15010010
RT02	15R0 OHM 5% 2W		13001350
RT03	10K0 OHM 5% 0,50W		40434960
RT23,43	68K0 OHM 5% 1W		10133770
RT25,45,65	2K2 OHM 5% 0,50W		30938220
RT48	2K2 OHM 5% 0,30W	⚠	41319509
RV02	56R0 OHM 5% 0,30W	⚠	15010060

CL04	7N2F 3,5% 1K6V		20153470
CL05	470N0F 5% 250V		43044300
CL10,15	330P0F 20% 1K0V		14035270
CL17,**CP**13,91	330P0F 20% 400V		14002220
CP01,02	100N0F 20% 275V	⚠	10331520
CP05,06	4N7F 1K0V		10058740
CP10	100U0F 385V		30662900
CP15	1N0F 20% 400V	⚠	43106800
CP21	1N0F 10% 1K0V		43441400
CP24	10N0F 10% 100V		10279180
CP71	2N2F 10% 400V		10188880
CP79	470P0F 10% 3K0V		14006050
CT03	2N2F 2K0V		14036020

LL01	DRIVER		20609540
LL03		⚠	80367500
LL05	DSTL28	⚠	10462780
LP02		⚠	10395160
LP03	SMT17	⚠	10387120

OTHER PARTS
AUTRES PIECES
SONSTIGE TEILE
ALTRE PARTI
OTRAS PIEZAS

BE01,02	SCART SOCKET PRISE PERITEL EURO-AV-BUCHSE EUROPRESA NORMALIZZATA EUROCONECTOR		10357750
BM012	HEADPHONE PLUG PRISE CASQUE BUCHSE KOPFHOERER PRESA JACK TOMA JACK		10092250
BT01	CATHODE RAY TUBE SOCKET SUPPORT TUBE CATHODIQUE BILDROEHRENFASSUNG SUPPORTO TUBO CATODICO SOPORTE T.R.C	⚠	20631370
FP01	1A6T TIME-LAG FUSE 1A6T FUSIBLE TEMPORISE 1A6T SICHERUNG 1A6T FUSIBILE TEMPORIZZATO 1A6T FUSIBLE TEMPORIZADO	⚠	48064700
NH01	CTT5000T UHF/VHF TUNER CTT5000T TETE UHF/VHF CTT5000T UHF/VHF TUNER CTT5000T TUNER UHF/VHF CTT5000T SINTONIZADOR UHF/VHF	R	20808880
SM001,002,003,004	MICROSWITCH MICRO CONTACTEUR MIKROSCHALTER MICROINTERRUTTORE MICROCONTACTOR		30011100
SP001	ON/OFF SWITCH CONTACTEUR MARCHE/ARRET EIN-AUS SCHALTER CONTATTORE ACCESO/SPENTO CONTACTOR MARCHA/PARADA	⚠	10276500

EQUIPMENT/PRESENTATION
EQUIPEMENT/PRESENTATION
AUSSTATTUNG/GEHAEUSE
PARTI VARIE
EQUIPO/PRESENTACION

CABINET WITH FRONT PANEL COFFRET EQUIPE AVEC FACADE GEHAEUSE KPL MIT FRONTPLATTE MOBILE COMPLETO MUEBLE EQUIPADO			25232670
16R OHM 5W LOUDSPEAKER 50X90 16R OHM 5W HAUT PARLEUR 50X90 16R OHM 5W LAUTSPRECHER 50X90 16R OHM 5W ALTOPARLANTE 50X90 16R OHM 5W ALTAVOZ 50X90			10317070
REAR PANEL DOS RUECKWAND PANNELLO POSTERIORE TAPA POSTERIOR		⚠	25309620
POWER SUPPLY LEAD CORDON D'ALIMENTATION NETZKABEL CAVO DI ALIMENTAZIONE CABLE DE ALIMENTACION		⚠	10260880
ON/OFF BUTTON TOUCHE MARCHE/ARRET EIN-AUS TASTE TASTO ACCESO/SPENTO TECLA MARCHA/PARADA			25150580
BUTTON STRIP BARRETTE DE TOUCHES TASTENLEISTE PIATTINA TASTI PLACA DE TECLAS			25150570
CHASSIS SUPPORT SUPPORT CHASSIS CHASSIS HALTER SUPPORTO CHASSIS SOPORTE CHASSIS			25179140
A51EBV13X01 CATHODE RAY TUBE A51EBV13X01 TUBE CATHODIQUE A51EBV13X01 FARBBILDROEHRE A51EBV13X01 TUBO CATODICO A51EBV13X01 T.R.C		⚠	10318920
DEGAUSSING COIL BOBINE DE DEMAGNETISATION ENTMAGNETISIERUNGSSPULE BOBINA DI SMAGNETIZZAZIONE BOBINA DE DESIMANTACION		⚠	47320195
INFRARED WINDOW GLACE INFRAROUGE INFRAROT FENSTER VETRO INFRAROSSO CRISTAL INFRARROJO			25142350
TC3003 REMOTE CONTROL TC3003 TELECOMMANDE TC3003 FERNBEDIENUNG TC3003 TELECOMANDO TC3003 TELEMANDO			10528890
FOLDING BOX EMBALLAGE CARTON KARTON IMBALLAGGIO CARTONE EMBALAJE CARTON			25284660
FITTING UPPER CALE SUPERIEURE POLSTER OBEN DISTANZIATORE SUPERIORE CALZO SUPERIOR			25184550
FITTING DOWNER CALE INFERIEURE POLSTER UNTEN DISTANZIATORE INFERIORE CALZO INFERIOR			25184530

INSTRUCTIONS
NOTICES
ANLEITUNGEN
INSTRUCZIONI
MANUALE

M5570GF PARTS LIST M5570GF LISTE DE PIECES DETACHEES M5570GF ERSATZTEILLISTE M5570GF LISTA PARTI DI RICAMBIO M5570GF LISTA DE PIEZAS DE REPUESTO		35049900
TX91G SERVICE MANUAL (EUROPE) TX91G DOC TECHNIQUE (EUROPE) TX91G TECHNISCHE DOKUMENTATION (EUROPE) TX91G DOCUMENTAZIONE TECNICA (EUROPE) TX91G DOCUMENTACION TECNICA (EUROPE)		35041190
M5570GF UM SABA F/I/D/GB/NL/E/P M5570GF NU SABA F/I/D/GB/NL/E/P M5570GF BA SABA F/I/D/GB/NL/E/P M5570GF IU SABA F/I/D/GB/NL/E/P M5570GF IU SABA F/I/D/GB/NL/E/P		25314300

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THOMSON MULTI MEDIA

TV

Brandt FERGUSON NORDMENDE SABA TELEFUNKEN THOMSON

PARTS LIST
LISTE PIECES DETACHEES
ERSATZTEILLISTE
LISTA PARTI DI RICAMBIO
LISTA DE PIEZAS DE REPUESTO

THOMSON
21MS76G
Chassis TX91G

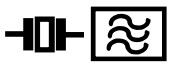
MODULES

MAIN	**TX91G4850150S0ES**		
AMFM	**STEREO/NICAM**	**R**	**20684410**
CRT	**CRTTX9114"**	**R**	**20590240**
FCB	**FCB910**		**25296580**
KDB	**KDB909**		**25296610**
SCI	**SCARTTX91**		**20335250**

FP23,70	MP160	⚠	10457130
FP90	MP125	⚠	10469180
GR001	TMFT1330T		10132400
IC01	TDA4665T FLAT		10155740
IE01	M51320P		20321730
IE02	MC14053BCP		46006700
IF01	TDA1771		10044490
II01	STV8224A2		10451330
IN01	U4454B		50896820
IN03	TDA7263		10281150
IN04	MC78L08ACP		10308410
IN05	MC33164P-5		10277030
IN20	MSP3400C-PP-C6		10379290
IR01	ST9293J9B1/HAK		20801180
IR02	TDA8139		10044580
IR03	ST24C04/B1		10030300
IT01	TEA5101B		10231440
IV01	STV2118B (CUT 5.1)		10384680
IX01	SAA5281ZP/E		10258810
IX02	MC7805/CT		46025200

TA06,**TF**21, **TI**32,**TK**02, **TR**01,04,05	BC847B SMD	11070770
TE01,03,04,05, **TN**06,**TX**01	BC558B	16001110
TE02,06,**TM**001, 002,003,**TR**02	BC548B	16000930
TH02,**TL**01, **TN**04,07,**TP**22	BC337-40	45001466
TI01	MMBTH10L SMD	16006500
TI31,**TV**01	BC857B SMD	30946660
TL02	BUH515D	20666700
TL13	2SC2236Y	16000220
TN01	BF799 SMD	16005860
TN05	BC848B SMD	16006290
TN08	BC858B SMD	16006330
TP20	BUL512HI	10440310
TP23	MPS750	16001340
TP34	BC858C SMD	50854683
TX02	BC548C	16000940

DC01,**DP**34, **DR**07	BZX55C5V1	80444140
DE01,**DF**22, **DK**08,**DL**01,11, 20,23,**DP**25, **DR**05,**DT**21,41, 61,**DV**01,02,03, **DX**01,02,03,04	1N4148	44009209
DF01,**DL**07,08	1N4001	16008160
DF03,04	BZX55C11	11073670
DF21	BZX55C20	30948810
DH01	BZX55C30	80444170
DH02	BZX55C5V6/ZPD5,6	44025401
DK07	BZX55C6V8	50890650
DL02,04,05,06, 09,**DP**19,23,31, 32	RGP10G	10459090
DL12	BZX55B4V3	90578000
DL13	BZX55B9V1	70438220
DL21	ZPD6,8	44074501
DN03,04	BAV103 SMD	10155030
DN05	BZX55C9V1	90578100
DP01,02,03,04	BYW27-1000	10455390
DP29,37,38	LL4148 SMD	16012450
DP33	BZX85C27/ZPY27	10246740
DP70,90	RGP15G	10272800
DP80	STTB406	20768390
DR01	BZX55B13	50890560
DR04,**DT**01	ZPD8,2	44021504
DT23,43,63	BAV21	44044407
GE001	MV5491A LED	10036730



FN01	K9260M FOS	20232110
QC01	4M433619HZ	10087710
QC02	3M579545HZ	10087720
QI01	G3962M FOS	20685860
QI31	6M5HZ	20356510
QI34	5M74HZ	20338170
QN01	18M432HZ	10334670
QR01	8M0HZ	10254430
QV01	503K0HZ	48023700
QX01	27M0HZ	20548370

FN93	31M9HZ	20498110
LI29	38M9HZ	10388320
LN01	38M9HZ	47309700

PI01	10K0 OHM	20351320
PP34	470R0 OHM	10260350

RE35,**RH**16, **RN**33,35,46	10R0 OHM 5% 0,25W	⚠	15009580
RF09	140K0 OHM 1% 0,25W		80437830
RH17,**RX**01	27R0 OHM 5% 0,25W	⚠	15009840
RL07	1K0 OHM 10% 0,50W	⚠	10226290
RL08	33R0 OHM 5% 2W		15022830
RL09	8R2 OHM 10% 7W		70432630
RL11	15R0 OHM 5% 0,50W	⚠	10226280
RL12,13,14	0R22 OHM 5% 0,50W	⚠	10305450
RL16	82K0 OHM 1% 0,70W		10148310
RL22	78K7 OHM 1% 0,70W		10224680
RN37,38	4R7 OHM 5% 0,30W	⚠	15010020
RP01	5R1 OHM 10% 2,50W		10472390
RP02	25R0 OHM 220V PTC	⚠	30093400
RP15	10M0 OHM 5% 0,70W	⚠	10074320
RP20	1R0 OHM 5% 2,50W		10383240
RP44	1R0 OHM 5% 0,25W	⚠	15009730

R : RECYCLED PART
: PIECE RECYCLEE
: AUSTAUSCHTEILE
: RICAMBIO RICICLATO
: MODULO REPROCESADO

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RT01	47R0 OHM 5% 0,30W	⚠	15010010
RT02	15R0 OHM 5% 2W		13001350
RT03	10K0 OHM 5% 0,50W		40434960
RT23,43	68K0 OHM 5% 1W		10133770
RT25,45,65	2K2 OHM 5% 0,50W		30938220
RT48	2K2 OHM 5% 0,30W	⚠	41319509
RV02	56R0 OHM 5% 0,30W	⚠	15010060

CL04	7N2F 3,5% 1K6V		20153470
CL05	360N0F 5% 250V		43441500
CL10,15	330P0F 20% 1K0V		14035270
CL17,**CP**13,91	330P0F 20% 400V		14002220
CL18,**CP**79	470P0F 10% 3K0V		14006050
CP01,02	100N0F 20% 275V	⚠	10331520
CP05,06	4N7F 1K0V		10058740
CP10	100U0F 385V		30662900
CP15	1N0F 20% 400V	⚠	43106800
CP21	1N0F 10% 1K0V		43441400
CP24	10N0F 10% 100V		10279180
CP71	2N2F 10% 400V		10188880
CT03	2N2F 2K0V		14036020

LL01	DRIVER		20609540
LL03		⚠	80367500
LL05	DSTL28	⚠	10462790
LP02		⚠	10395160
LP03	SMT17	⚠	10387120

OTHER PARTS
AUTRES PIECES
SONSTIGE TEILE
ALTRE PARTI
OTRAS PIEZAS

BE01,02	SCART SOCKET PRISE PERITEL EURO-AV-BUCHSE EUROPRESA NORMALIZZATA EUROCONECTOR	10357750
BM010	CINCH SOCKET PRISE CINCH CHINCH-BUCHSE PRESA CINCH TOMA CINCH	10512920
BM011	SVHS SOCKET PRISE SVHS S-VHS-BUCHSE PRESA SVHS TOMA SVHS	80406031
BM012	HEADPHONE PLUG PRISE CASQUE BUCHSE KOPFHOERER PRESA JACK TOMA JACK	10002260
BT01	CATHODE RAY TUBE SOCKET SUPPORT TUBE CATHODIQUE BILDROEHRENFASSUNG SUPPORTO TUBO CATODICO SOPORTE T.R.C	⚠ 20631370
FP01	1A6T TIME-LAG FUSE 1A6T FUSIBLE TEMPORISE 1A6T SICHERUNG 1A6T FUSIBILE TEMPORIZZATO 1A6T FUSIBLE TEMPORIZADO	⚠ 48064700
NH01	CTT5000T UHF/VHF TUNER CTT5000T TETE UHF/VHF CTT5000T UHF/VHF TUNER CTT5000T TUNER UHF/VHF CTT5000T SINTONIZADOR UHF/VHF	R 20808880
SM001,002,003,004	MICROSWITCH MICRO CONTACTEUR MIKROSCHALTER MICROINTERRUTTORE MICROCONTACTOR	20540300

EQUIPMENT/PRESENTATION
EQUIPEMENT/PRESENTATION
AUSSTATTUNG/GEHAEUSE
PARTI VARIE
EQUIPO/PRESENTACION

CABINET WITH FRONT PANEL COFFRET EQUIPE AVEC FACADE GEHAEUSE KPL MIT FRONTPLATTE MOBILE COMPLETO MUEBLE EQUIPADO	25312590
16R OHM 5W LOUDSPEAKER 50X90 16R OHM 5W HAUT PARLEUR 50X90 16R OHM 5W LAUTSPRECHER 50X90 16R OHM 5W ALTOPARLANTE 50X90 16R OHM 5W ALTAVOZ 50X90	10317070
REAR PANEL DOS RUECKWAND PANNELLO POSTERIORE TAPA POSTERIOR	⚠ 25294400
POWER SUPPLY LEAD CORDON D'ALIMENTATION NETZKABEL CAVO DI ALIMENTAZIONE CABLE DE ALIMENTACION	⚠ 10260830
ON/OFF BUTTON TOUCHE MARCHE/ARRET EIN-AUS TASTE TASTO ACCESO/SPENTO TECLA MARCHA/PARADA	25294060
ON/OFF SWITCH CONTACTEUR MARCHE/ARRET EIN-AUS SCHALTER CONTATTORE ACCESO/SPENTO CONTACTOR MARCHA/PARADA	⚠ 10276500
BUTTON ASSY ENSEMBLE DE TOUCHES TASTENEINHEIT ASSIEME TASTI CONJUNTO DE TECLAS	25313820
A51EFS83X191 CATHODE RAY TUBE A51EFS83X191 TUBE CATHODIQUE A51EFS83X191 FARBBILDROEHRE A51EFS83X191 TUBO CATODICO A51EFS83X191 T.R.C	⚠ 10515820
DEGAUSSING COIL BOBINE DE DEMAGNETISATION ENTMAGNETISIERUNGSSPULE BOBINA DI SMAGNETIZZAZIONE BOBINA DE DESIMANTACION	⚠ 47320195
RCT3003 REMOTE CONTROL RCT3003 TELECOMMANDE RCT3003 FERNBEDIENUNG RCT3003 TELECOMANDO RCT3003 TELEMANDO	10292960
FOLDING BOX EMBALLAGE CARTON KARTON IMBALLAGGIO CARTONE EMBALAJE CARTON	25288160
FITTING UPPER CALE SUPERIEURE POLSTER OBEN DISTANZIATORE SUPERIORE CALZO SUPERIOR	25288040
FITTING DOWNER CALE INFERIEURE POLSTER UNTEN DISTANZIATORE INFERIORE CALZO INFERIOR	25288050

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ANLEITUNGEN
INSTRUCZIONI
MANUALE

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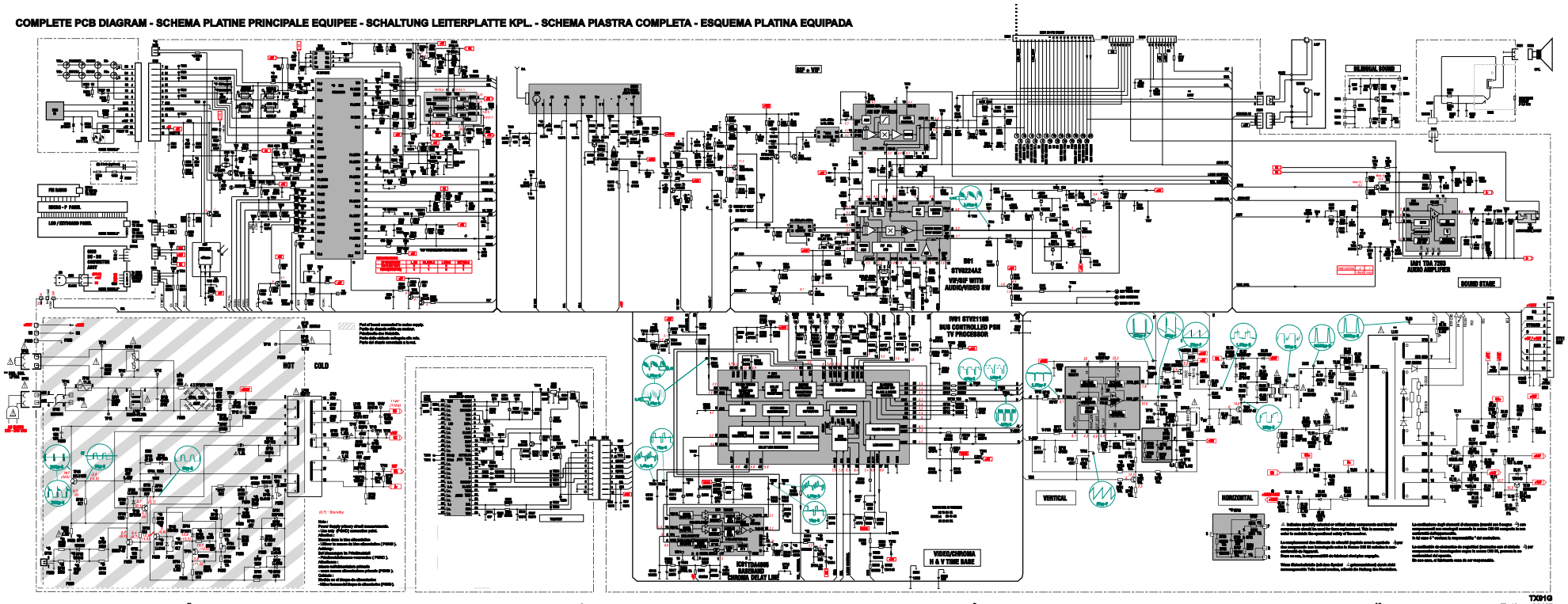
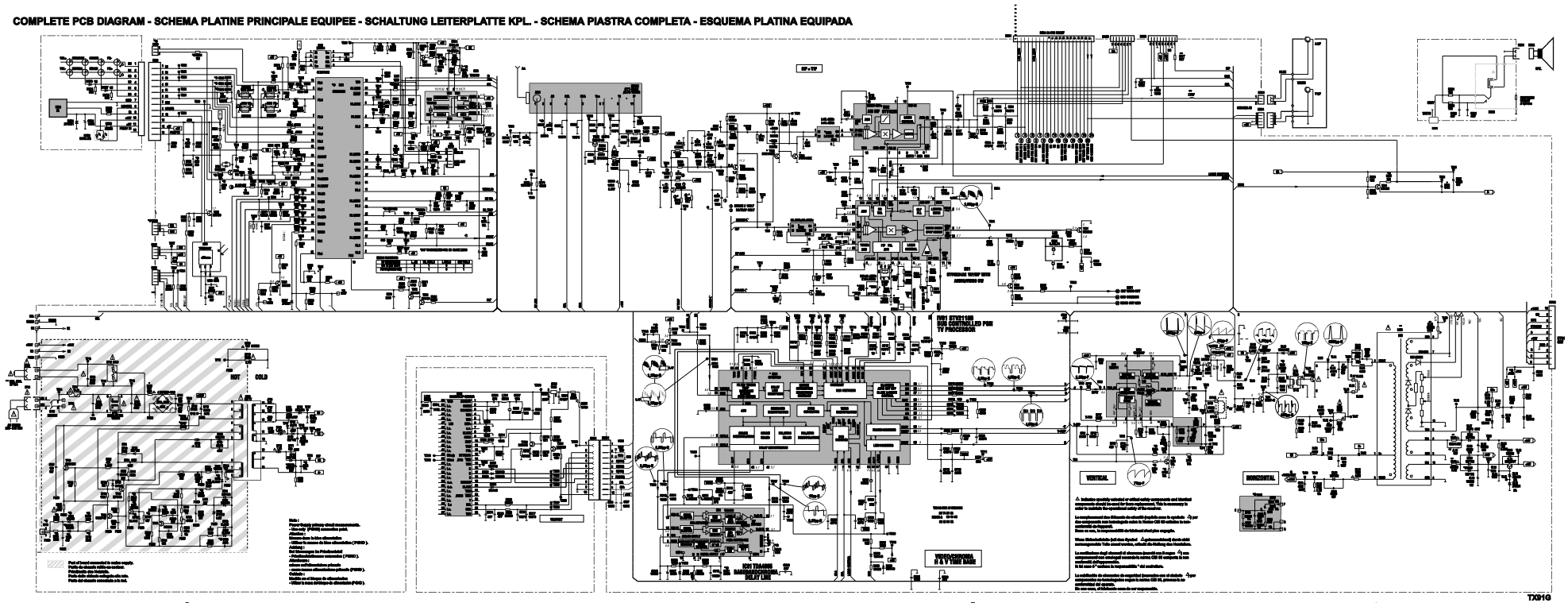
THOMSON MULTIMEDIA 46, Quai Alphonse Le Gallo 92648 Boulogne Cedex FRANCE

COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL. - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



TX01G
First issue 04 / 07

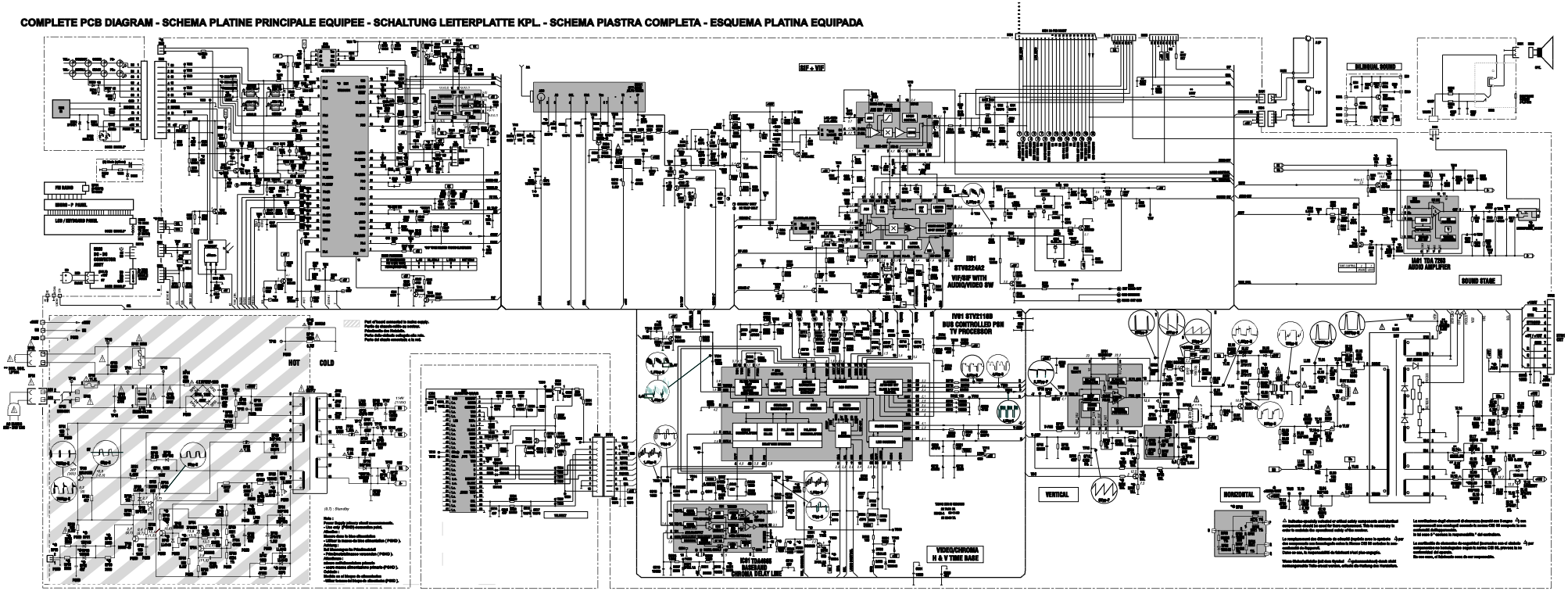
COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL. - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



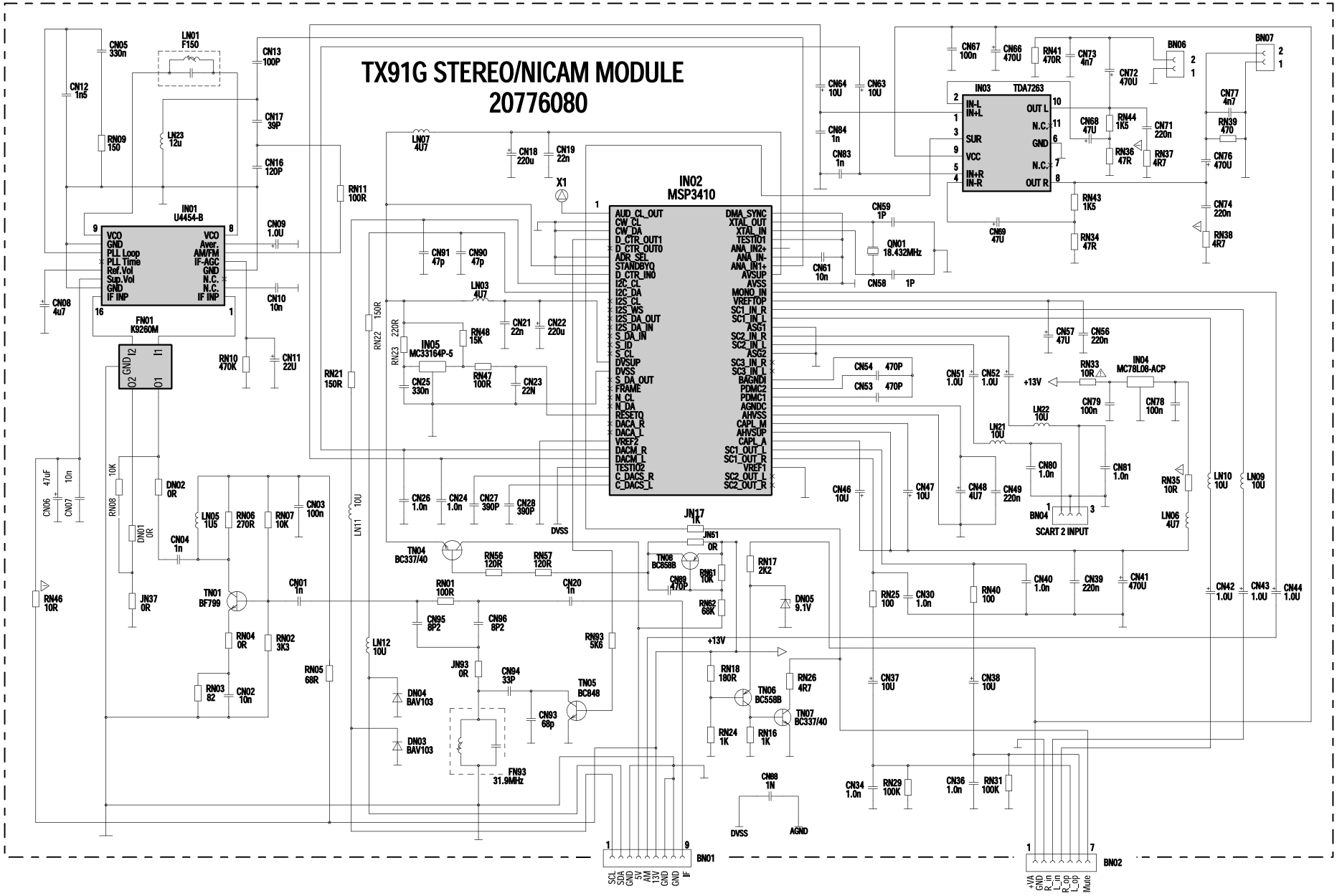
5 6 7 8

TX91G
First issue 02 / 97

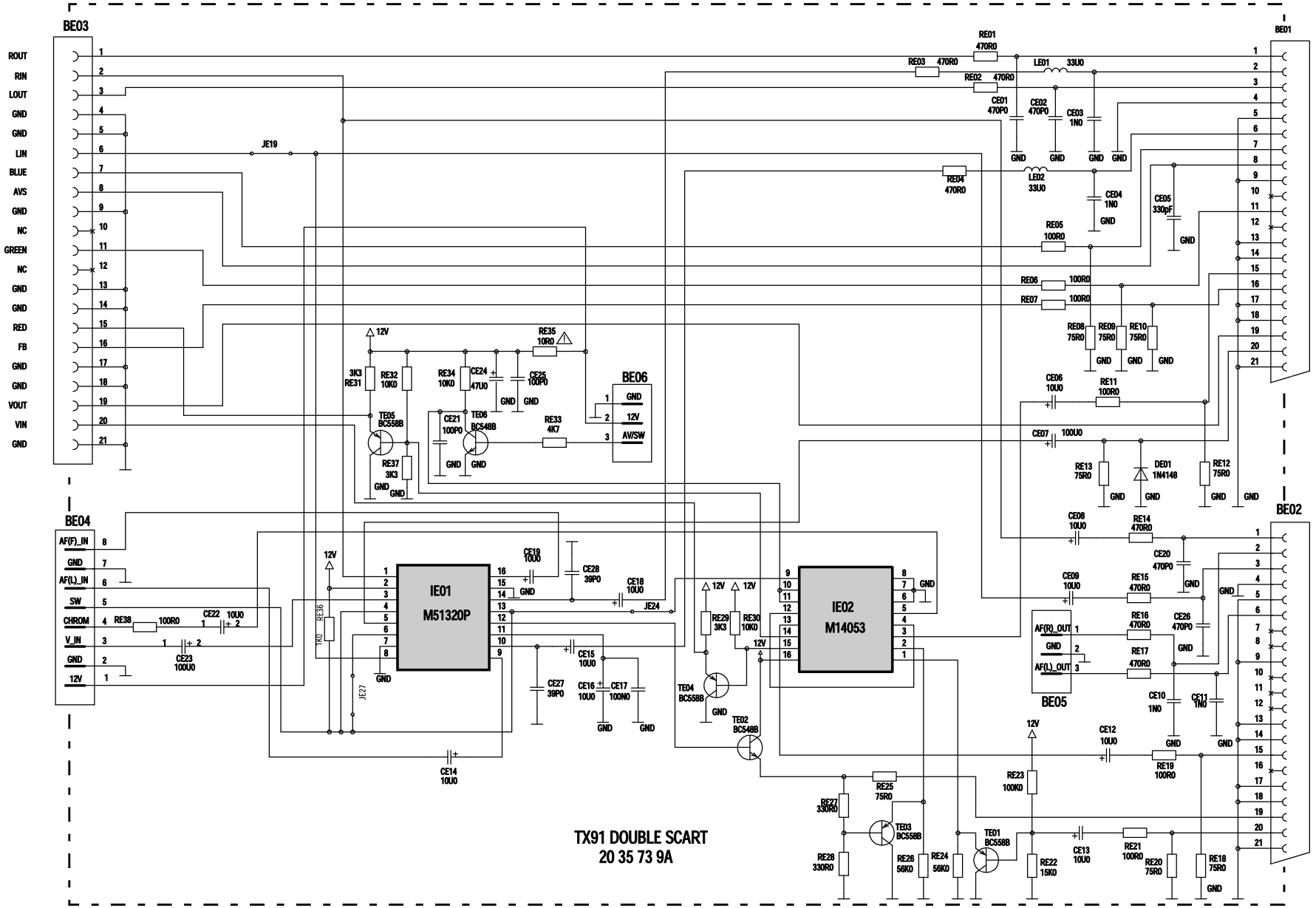
COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL. - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA

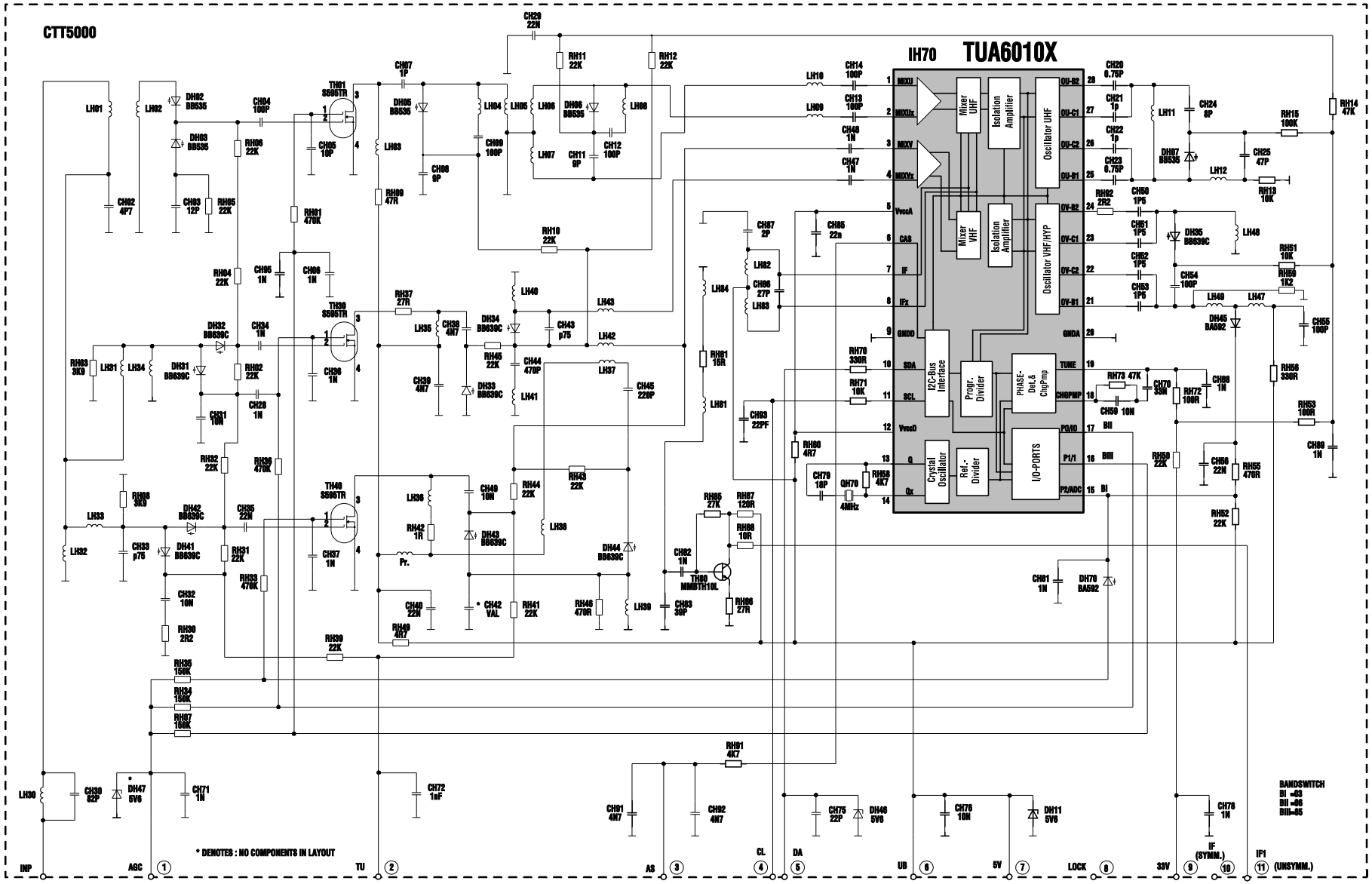


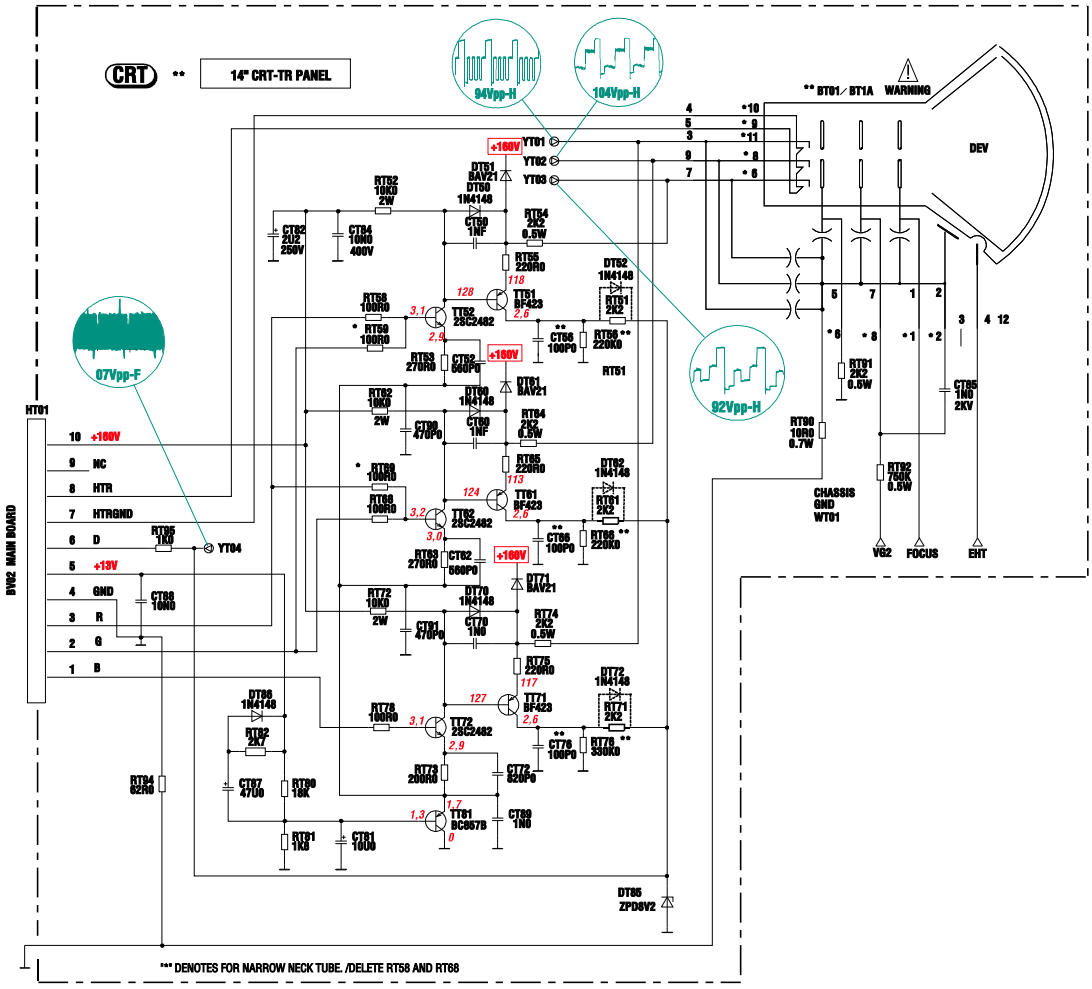
NICAM MODULE - MODULE NICAM - NICAM BAUSTEIN - MODULO NICAM - MÓDULO NICAM

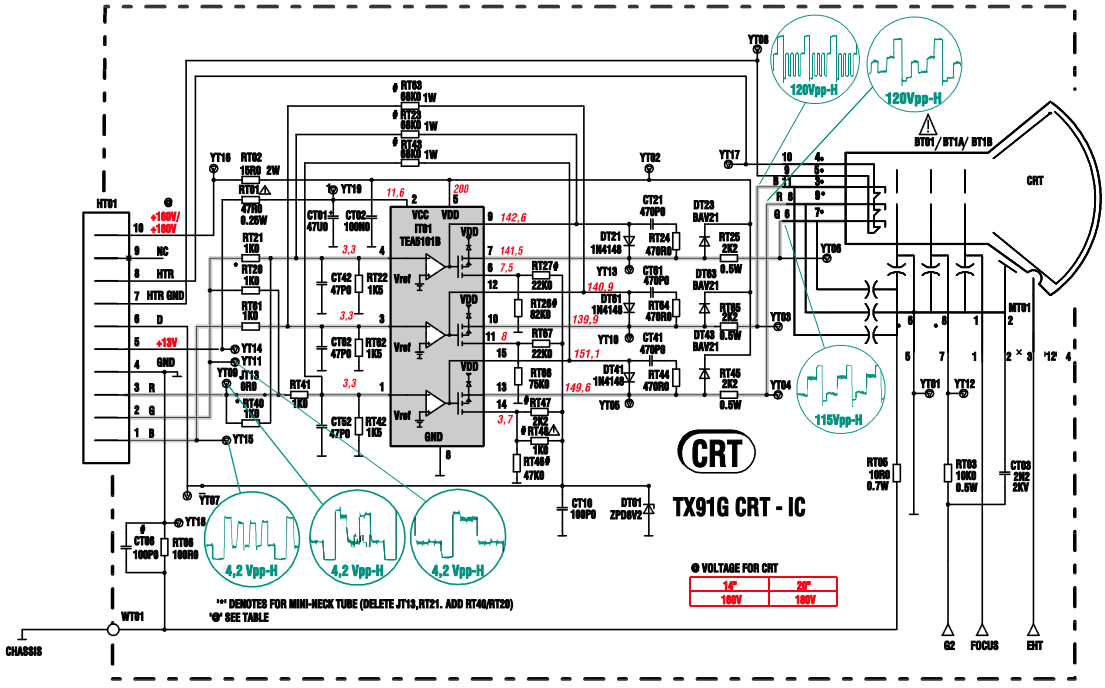


SCART INTERFACE MODULE - MODULE INTERFACE PERITELEVISION - SCART INTERFACE - MODULO PRESA PERITEL - MODULO EUROTOMA



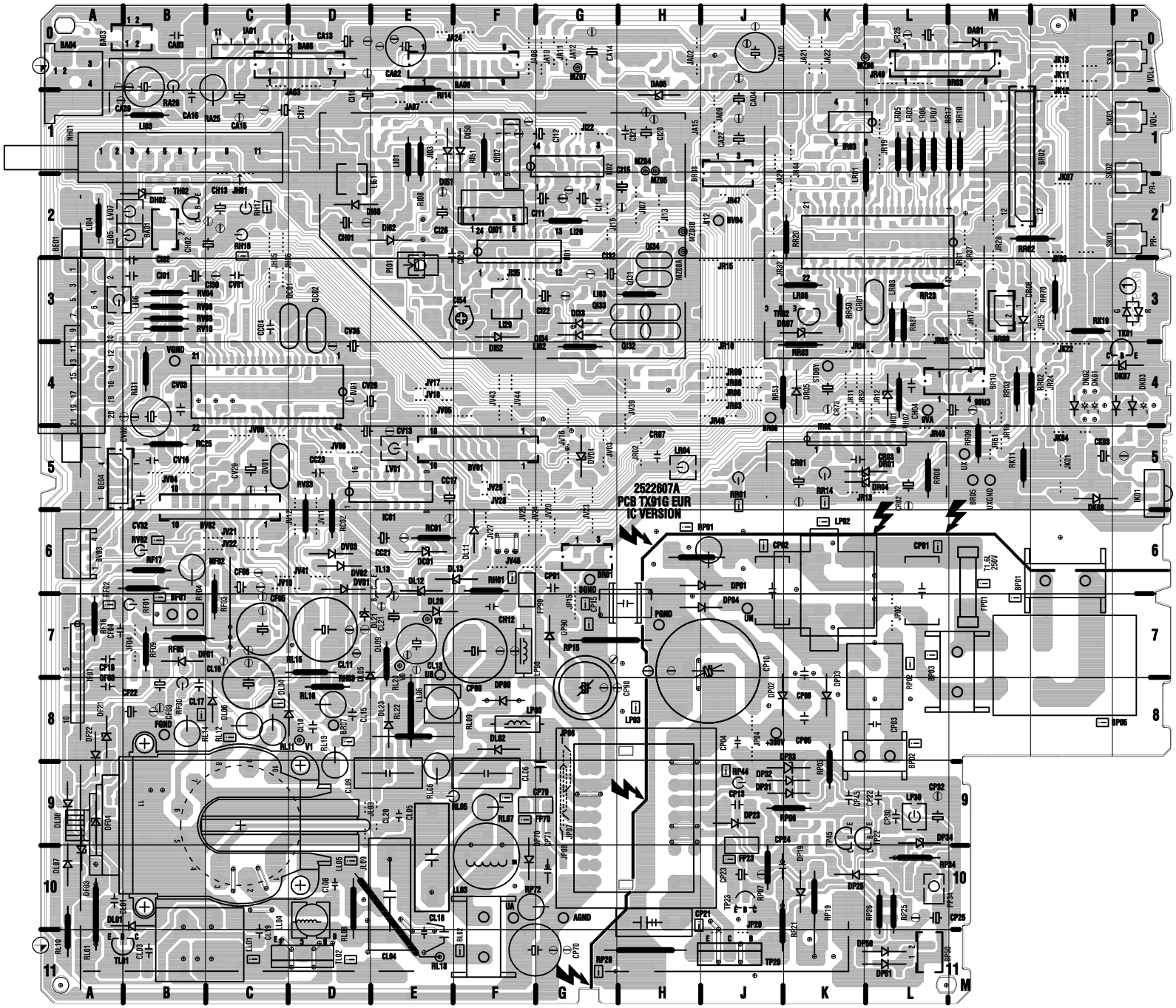

CTT5000
IH70
TUA6010X
* DENOTES : NO COMPONENTS IN LAYOUT
BANDSWITCH
BI =03
BII =06
BIII=05
INP
AGC
TU
AS
CL
DA
UB
5V
LOCK
33V
IF (SYMM.)
IF1 (UNSYMM.)


CRT
**
14" CRT-TR PANEL
94Vpp-H
104Vpp-H
** BT01 / BT1A WARNING
DEV
07Vpp-F
92Vpp-H
BV02 MAIN BOARD
HT01
10 +160V
9 NC
8 HTR
7 HTRGND
6 D
5 +13V
4 GND
3 R
2 G
1 B
YT01
YT02
YT03
YT04
+160V
RT51
RT90 10R0 0.7W
RT92 750K 0.5W
CT85 1N0 2KV
CHASSIS GND WT01
VG2
FOCUS
EHT
*** DENOTES FOR NARROW NECK TUBE. /DELETE RT58 AND RT68


120Vpp-H
120Vpp-H
BT01 / BT1A / BT1B
CRT
HT01
+160V/ +160V
9 NC
8 HTR
7 HTR GND
6 D
5 +13V
4 GND
3 R
2 G
1 B
IT01 TEA5101B
VCC
VDD
Vref
GND
YT01
YT02
YT03
YT04
YT06
YT07
YT08
YT10
YT11
YT12
YT13
YT14
YT15
YT16
YT17
YT18
YT19
115Vpp-H
4,2 Vpp-H
4,2 Vpp-H
4,2 Vpp-H
CRT
TX91G CRT - IC
VOLTAGE FOR CRT
14" 160V
20" 180V
*** DENOTES FOR MINI-NECK TUBE (DELETE JT13,RT21. ADD RT40/RT20)
* SEE TABLE
WT01
CHASSIS
G2
FOCUS
EHT

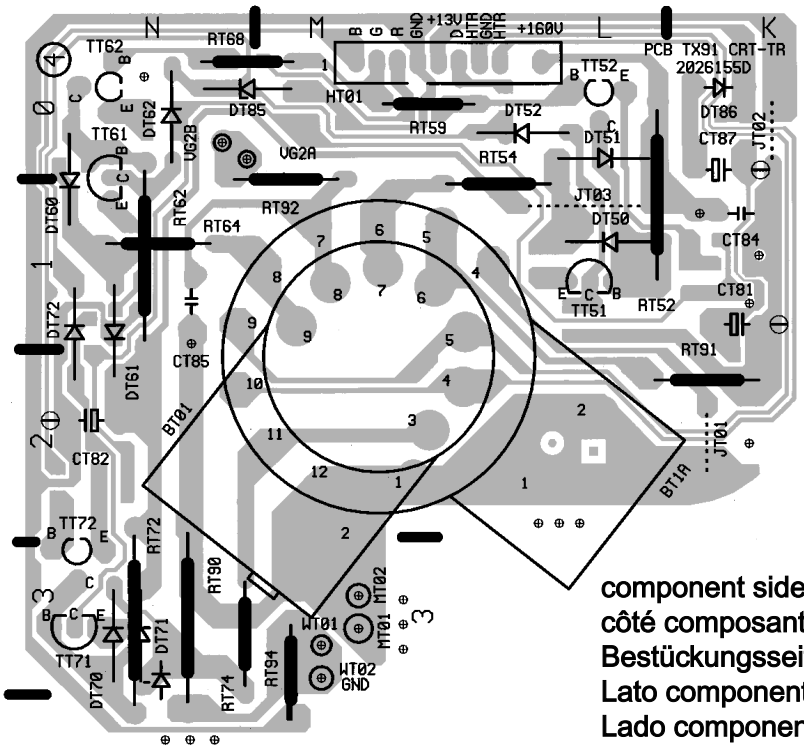
MAIN BOARD - PLATINE PRINCIPALE - CHASSIS GRUNDPLATTE - PIASTRA PRINCIPALE - PLATINA PRINCIPAL

COMPONENT SIDE - COTE COMPOSANTS - BESTÜCKUNGSSEITE - LATO COMPONENTI - LADO COMPONENTES

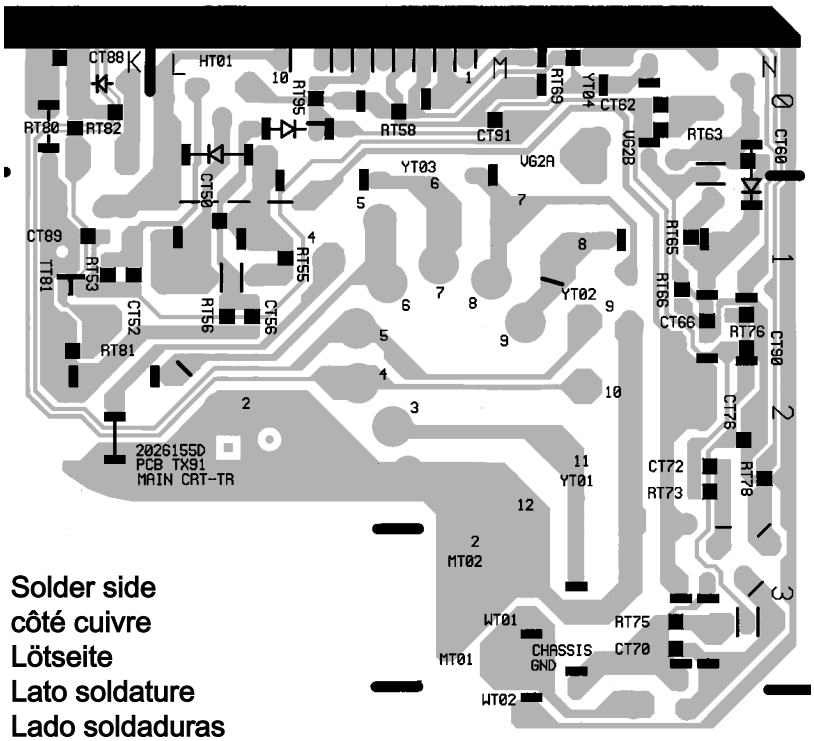


VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEUR VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO

- TRANSISTOR VERSION -



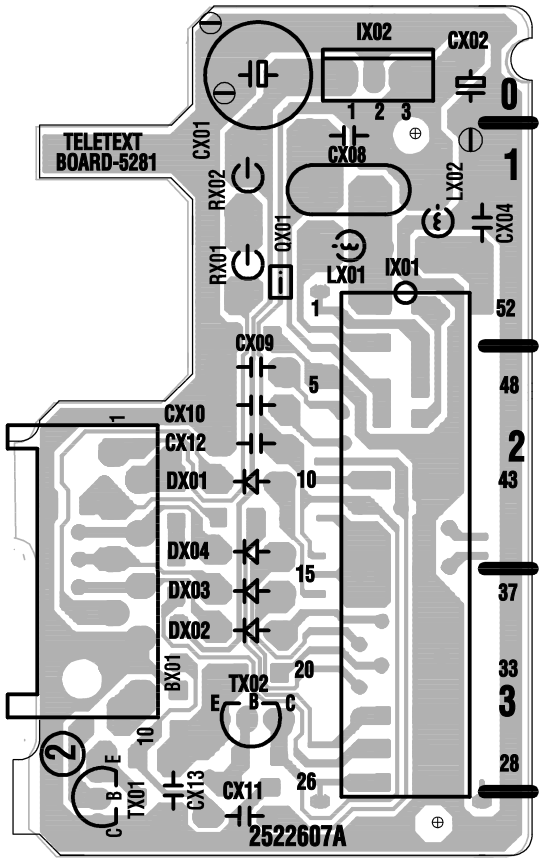
component side
côté composants
Bestückungsseite
Lato componenti
Lado componentes



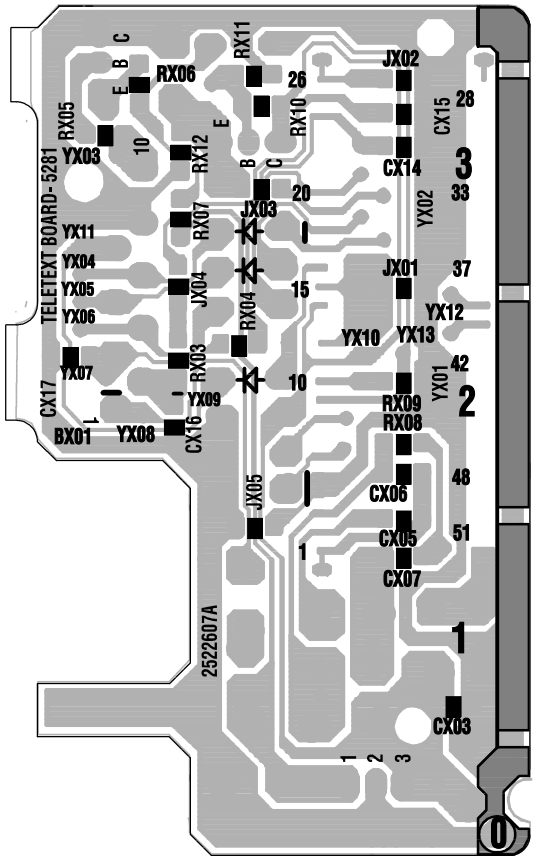
Solder side
côté cuivre
Lötseite
Lato soldature
Lado soldaduras

TELETEXT MODULE - MODULE TELETEXTE - VIDEOTEXT MODUL
MODULO TELEVIDEO - MODULO TELETEXTO

COMPONENT SIDE - COTE ELEMENTS - BESTÜCKUNGSSEITE
LATO COMPONENTI - LADO COMPONENTES

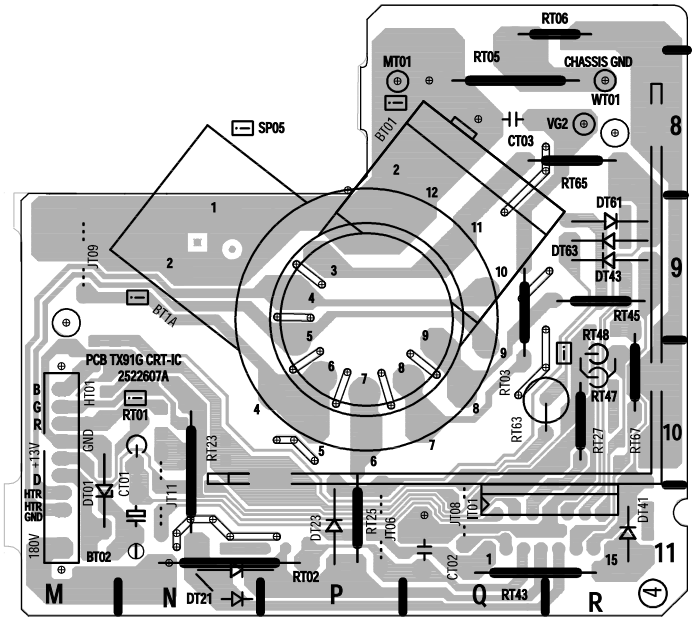


SOLDER SIDE - COTE CUIVRE - LÖTSEITE
LATO SALDATURE - LADO DEL COBRE

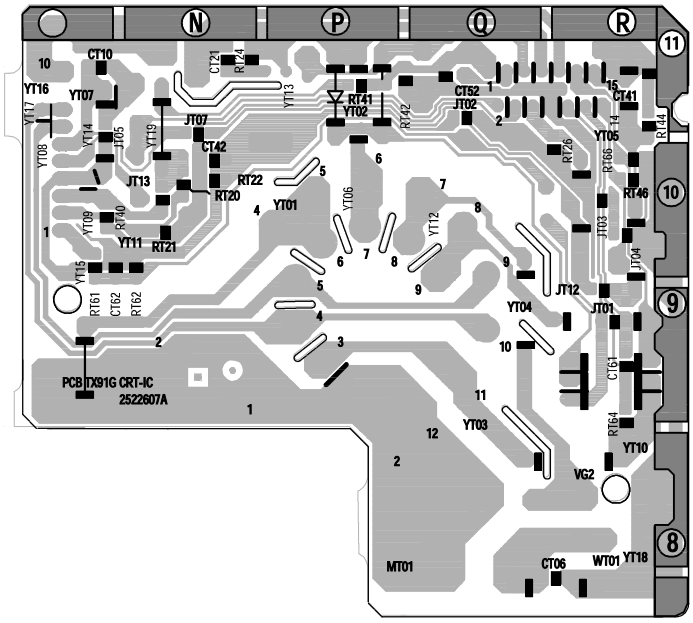


VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEUR VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO

COMPONENT SIDE - COTE ELEMENTS - BESTÜCKUNGSSEITE
LATO COMPONENTI - LADO COMPONENTES

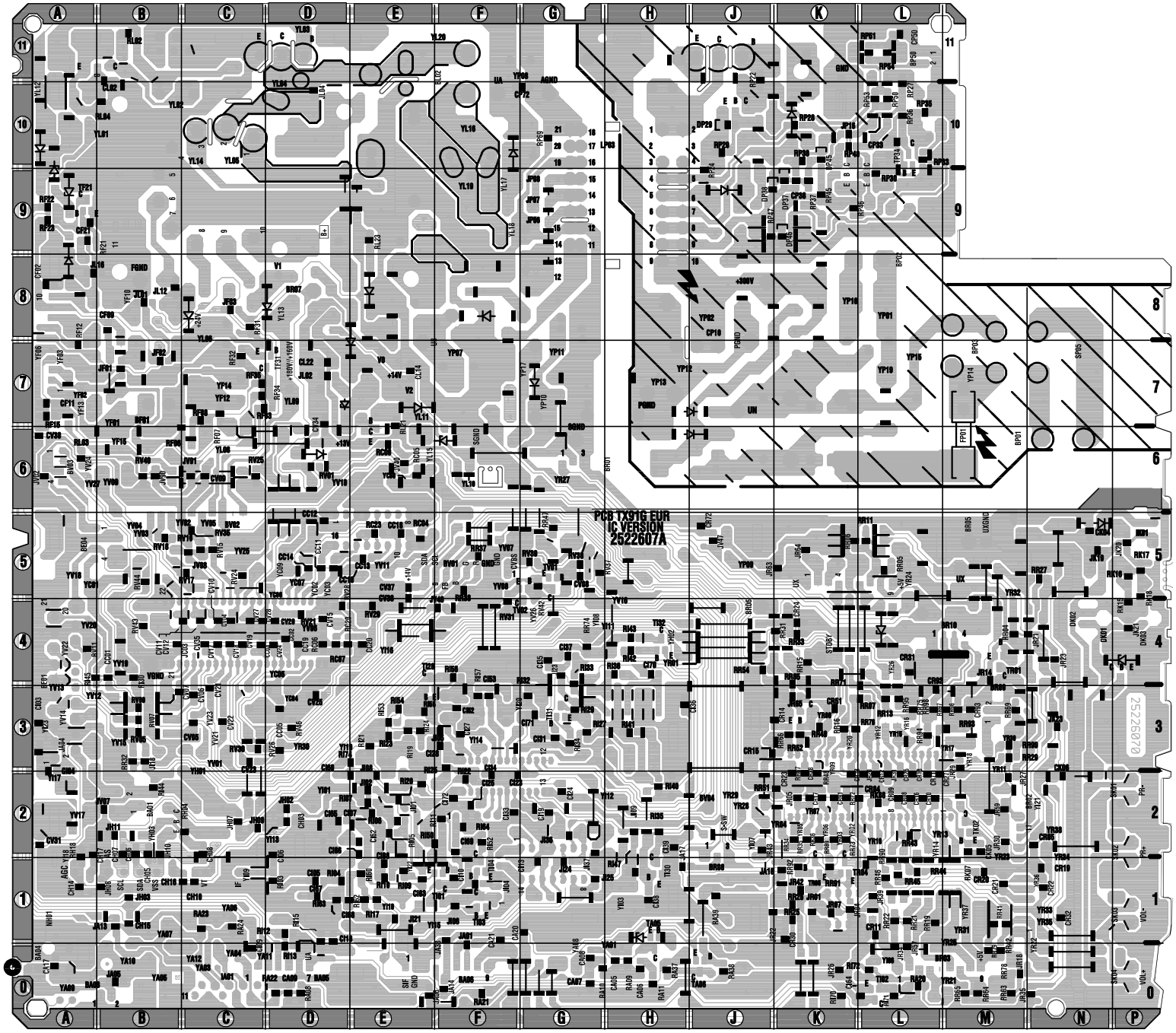


SOLDER SIDE - COTE CUIVRE - LÖTSEITE
LATO SALDATURE - LADO DEL COBRE



MAIN BOARD - PLATINE PRINCIPALE - CHASSIS GRUNDPLATTE - PIASTRA PRINCIPALE - PLATINA PRINCIPAL

SOLDER SIDE - CÔTE SOUDURES - LÖTSEITE - LATO SALDATURE - LADO SOLDADURAS



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TV

SERVICE MANUAL
DOCUMENTATION TECHNIQUE
TECHNISCHE DOKUMENTATION
DOCUMENTAZIONE TECNICA
DOCUMENTACION TECNICA

TX91G

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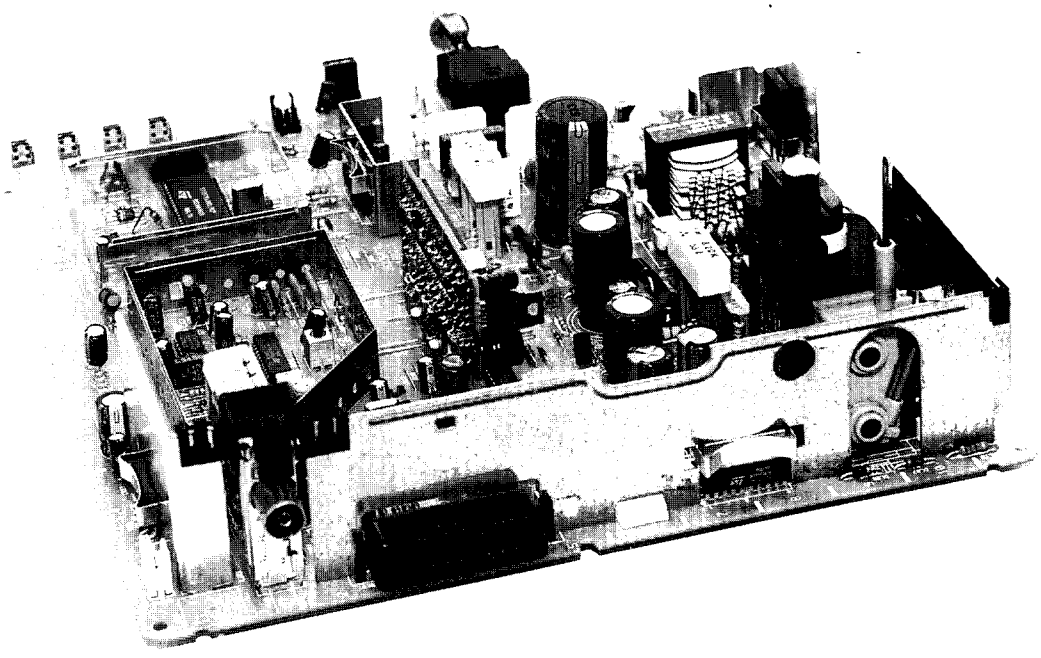

⚠

WARNING : *Before servicing this chassis read the safety recommendations.*
ATTENTION : *Avant toute intervention sur ce châssis, lire les recommandations de sécurité.*
ACHTUNG : *Vor jedem Eingriff auf diesem Chassis, die Sicherheitsvorschriften lesen.*
ATTENZIONE : *Prima di intervenire sullo chassis, leggere le norme di sicurezza.*
IMPORTANTE : *Antes de cualquier intervención, leer las recomendaciones de seguridad.*

Code : 350 411 90 - 0497 / 5,1M- TX91G Print. ROSSEELS PRINTING : 01 53 01 11 11

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Adjustments

Service Menu

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Video amplifier board / IC version

Video amplifier board / Transistor version

Teletext module

IC and transistor Outlines

Abbreviations

Basic cirduit diagram

Video amplifier board / both versions

Circuit description

⚠ Indicates critical safety components, and identical components should be used for replacement. Only then can the operational safety be garanteed.

Le remplacement des éléments de sécurité (repérés avec le symbole ⚠) par des composants non homologués selon la Norme CEI 65 entraine la non-conformité de l'appareil. Dans ce cas, la responsabilité du fabricant n'est plus engagée.

Wenn Sicherheitsteile (mit dem Symbol ⚠ gekennzeichnet) nicht durch Original - Ersatzteile ersetzt werden, erlischt die Haftung des Herstellers.

La sostituzione degli elementi di sicurezza (marcati con il segno ⚠) con componenti non omologati secondo la norma CEI 65 comporta la non conformitá dell'apparecchio. In tal caso è "esclusa la responsabilità " del costruttore.

La sustitución de elementos de seguridad (marcados con el simbolo ⚠) por componentes no homologados segun la norma CEI 65, provoca la no conformidad del aparato. En ese caso, el fabricante cesa de ser responsable.

MEASUREMENT CONDITIONS - CONDITIONS DE MESURES - MESSBEDINGUNGEN
CONDIZIONI DI MISURA - CONDICIONES DE MEDIDAS

RECEIVER : On UHF input level : 1 mV, bar test pattern :
- PAL. I standard. 100% white.

Via the scart socket, input level : 1 Vpp, bar test pattern :

Colour, contrast and brightness at mid-position, sound at minimum.
Programme selected : PR 01.

DC voltages measured between the point and earth using a digital voltmeter.

RECEPTEUR : En UHF, niveau d'entrée 1 mV mire de barres
- SECAM. Norm L, Blanc 100%.

Par la prise Péritélévision, niveau d'entrée 1 Vcc. mire de barres.

Couleur, contraste, lumière à mi-course, son minimum.
Programme affecté PR 01.

Tensions continues relevées par rapport à la masse avec un voltmètre numérique.

EMPFÄNGER : Bei UHF Eingangspegel 1 mV, Farbbalken :
- PAL. Norm G, Weiss 100%.

Über die Scartbuchse : Eingangspegel 1 Vss, Farbbalken :

Farbe, Kontrast, Helligkeit in der Mitte des Bereichs, Ton auf Minimum.
Zugeordnetes Programm PR 01.

Gleichspannungen mit einem digitaler Voltmeter zur Masse gemessen.

RICEVITORE : In UHF, livello d'entrata 1 mV, monoscopio par barre :
- PAL. norma G, bianco 100%.

Par la presa SCART, livello d'entrata 1 Vcc, monoscopio per barre :

Colore, Contrasto, Luce a metá corsa, Suono minimo.
Programma designato PR 01.

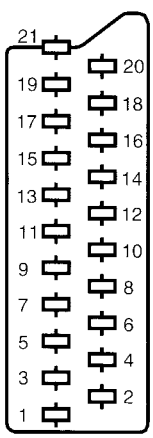
Tensioni continue rilevate rispetto alla massa con un voltametro numerico.

RECEPTOR : En UHF, nivel de entrada 1 mV, mira de barras :
- PAL. norma G, blanco 100%.

Por la toma Peritelevision, nivel de entrada 1 Vpp mira de barra.

Color, Contraste, luz a mitad de carrera, Sonido mínimo.
Programa afectado PR 01.

Tensiones continuas marcadas en relacion a la masa con un voltmetro digital.



NOTE : (MAIN) ... etc. identifies each pcb module.

NOTE : (MAIN) ... etc. repères des platines constituant l'appareil.

HINWEIS : (MAIN) ...usw. Kennzeichnung der Platinen, aus denen das Gerät zusammengesetzt ist.

NOTA : (MAIN) ... ecc. indicazioni delle piastre che costituiscono l'apparecchio.

NOTA : (MAIN) ... etc. marcas de las placas que constituyen el aparato.

		ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO	ESPAÑOL
1	→	AUDIO "R"	AUDIO "D"	AUDIO "R"	AUDIO "D"	AUDIO "D"
2	←	AUDIO "R"	AUDIO "D"	AUDIO "R"	AUDIO "D"	AUDIO "D"
3	→	AUDIO "L"	AUDIO "G"	AUDIO "L"	AUDIO "S"	AUDIO "I"
4	—	AUDIO	AUDIO	AUDIO	AUDIO	AUDIO
5	—	" BLUE "	" BLEU "	"BLAU"	"BLU"	"AZUL"
6	←	AUDIO "L" MONO	AUDIO "G" MONO	AUDIO "L" MONO	AUDIO "S" MONO	AUDIO "I" MONO
7	←	" BLUE "	" BLEU "	"BLAU"	BLU	AZUL
8	←	SLOW SWITCH	COMMUT. LENTE	AV UMSCHALTUNG	"COMMUTAZIONE LENTA"	"CONMUTACION LENTA"
9	—	" GREEN "	"VERT"	"GRÜN"	"VERDE"	"VERDE"
10	NC					
11	←	" GREEN "	"VERT"	"GRÜN"	"VERDE"	"VERDE"
12	NC					
13	—	" RED "	"ROUGE"	"ROT"	"ROSSO"	"ROJA"
14	NC					
15	←	" RED "	"ROUGE"	"ROT"	"ROSSO"	"ROJA"
16	←	FAST SWITCH	COMMUT. RAPIDE	AUSTASTUNG	"COMMUTAZIONE RAPIDA"	"CONMUTACION RAPIDA"
17	⊥	VIDEO	VIDEO	VIDEO	VIDEO	VIDEO
18	—	FAST SWITCH	COMMUT. RAPIDE	AUSTASTUNG	"COMMUTAZIONE RAPIDA"	"CONMUTACION RAPIDA"
19	→	VIDEO	VIDEO	VIDEO	VIDEO	VIDEO
20	←	VIDEO OR "SYNC"	VIDEO SYNCHRO	VIDEO ODER SYNCHRO	VIDEO O SINCRO	VIDEO O SINCRO
21	→	PLUG SCREEN BOX	BLINDAGE PRISE	ABSCHIRMUNG DES STECKERS	ARMATURA DELLA SPINA	BLINDAJE DEL ENCHUFE

→ : OUTPUT - SORTIE - AUSGANG - USCITA - SALIDA

← : INPUT - ENTRÉE - EINGANG - ENTRATA - ENTRADA

— : EARTH - MASSE - MASSE - MASSA - MASA

INFORMATION - INFORMATIONS - INFORMATIONEN - INFORMAZIONE - INFORMACIONES

(GB) Chassis identification table :
1 - Main chassis designation code.
2 - Chassis configuration (modules) and the page number's where they are described.

(F) Le tableau ci-dessous regroupe :
1 - La désignation des chassis
2 - L'environnement électronique de chaque chassis (modules) et le numéro de page où il est décrit.

(D) Die nachstehendeTabelle umfaßt:
1 - Die Chassisbezeichnung
2 - Die elektronischen Baugruppen (Module) der Chassis und die Seitenzahl auf der sie beschrieben werden

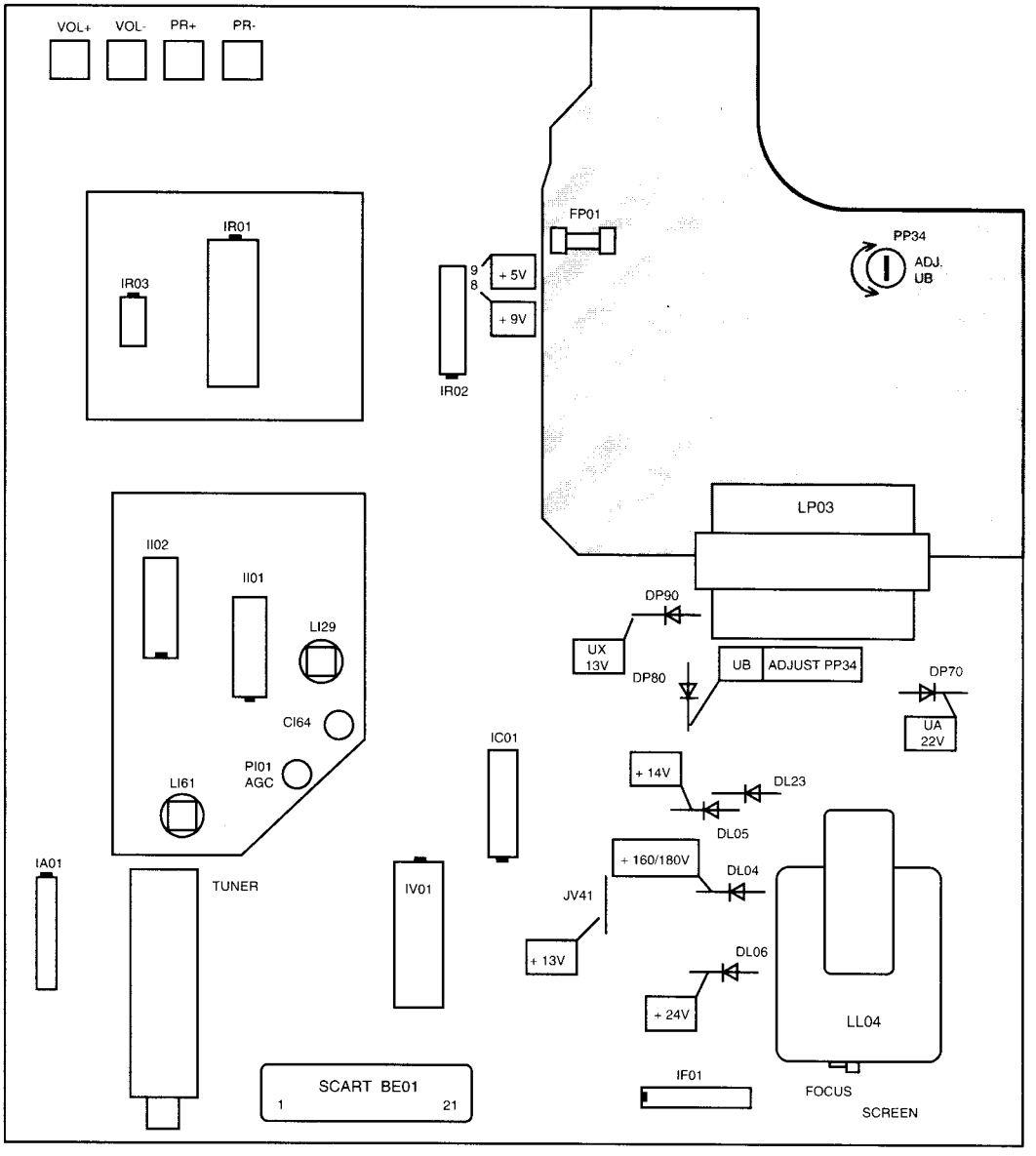
(I) La tabella qui di seguito contiene:
1 - La descrizione dei telai
2 - l'ambiente elettronico di ogni telaio (moduli) e il numero di pagina nella quale è descritto.

(E) El cuadro siguiente agrupa:
1 - La designación de los chasis
2 - El entorno electrónico de cada chasis (módulos) y el número de página donde está descrito.

TX91G Mono

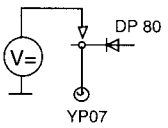
MAIN CHASSIS DESCRIPTION	MAIN CHASSIS ADJUSTMENT	MAIN CHASSIS SCHEMATIC	TEXT PCB	CRT FCB
TX91G 14"	2to5	7to11	12to16	23to24
TX91G 20"	"	"	"	"
TX91G 21"	"	"	"	"
TX91G 2837050Q1 ES	"	"	"	"
TX91G 3110010A1 ES	"	"	"	"
TX91G 3830010Q1 ES	"	"	"	"
TX91G 3830050Q1 ES	"	"	"	"
TX91G 3850010B1 036	"	"	"	"
TX91G 3850050B1 ES	"	"	"	"
TX91G 4620010A1 ES	"	"	"	"
TX91G 4620010Q1 ES	"	"	"	"
TX91G 4620050A1 ES	"	"	"	"
TX91G 4620050Q1 ES	"	"	"	"
TX91G 46200G0A1 PL	"	"	"	"
TX91G 4830010R1 ES	"	"	"	"
TX91G 4830050Q1 ES	"	"	"	"
TX91G 4850050B1 ES	"	"	"	"
TX91G 4850050C1 ES	"	"	"	"
TX91G 63830010Q1 ES	"	"	"	"

LOCATION OF CONTROLS - EMPLACEMENT DES REGLAGES - SERVICE LAGEPLAN - POSIZIONE REGULATORI DI SERVIZIO - SITUACIÓN DE LOS AJUSTES



ADJUSTMENTS - REGLAGES - EINSTELLUNGEN - REGOLAZIONE - AJUSTES

U B — PP 34 — Contrast, brightness and volume to minimum



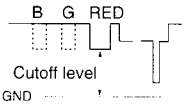
Screen Size	CRT Vendor / Type N	FBT Vendor / Type N	Min beam current UB adjustment
10"	Samsung 27GDC85X-TC10	Samsung FCV1010-E03	106V+/-0,5V
14"	Thai-CRT (baretube) A34JXV70X	Samsung FCV1410-E18	107V+/-0,5V
	ChungHwa 370KRB22-TC38	Samsung FCV1410-E18	108V+/-0,5V
		Orega 203832HO 204529H0 P1 *G5603-03	108V+/-0,5V
	Polkolor A34EFU13X91	Samsung FCV1410-E18	104V+/-0,5V
		Orega 203832HO 204529Ho P1 *G5603-03	104V+/-0,5V
17"	Philips A41EAM40X01	Samsung FCV1410-E18	110V+/-0,5V
		Orega 203832HO 204529H0 P1 *G5603-00	110V+/-0,5V

Screen Size	CRT Vendor / Type N	FBT Vendor / Type N	Min beam current UB adjustment
20"	Polkolor A48EEV13X01	Samsung FCV2010-E07	115V+/-0,5V
		Orega 203832IO 204529G0 P1 *G5604-00	115V+/-0,5V
	ChungHwa 510UFB22-TC55	Samsung FCV2010-E07	116V+/-0,5V
		Orega 203832IO 204529G0 P1 *G5604-00	116V+/-0,5V
21"	Hitachi A51JSY61X03	Samsung FCV2010-E07	116V+/-0,5V
		Orega 203832IO 204529G0 P1 *G5604-00	116V+/-0,5V
21"	VideoColor A51EBV13X01	Orega 203832IO 204529G0 P1 *G5604-00	116V+/-0,5V
	VideoColor A51EFS43X191	Orega *G5552-00 *G5624-00 *G5605-00	

ADJUSTMENTS - REGLAGES - EINSTELLUNGEN
REGOLAZIONE - AJUSTES

Hotel Menu
Install menu : 1) Standby
2) Switch of mains
3) " " on " " while pushing program + in front panel

"P n ron 05 vn : arching
elimination : stby
s. app.
s on pr +/- wl.

U G2 / cutoff	SCREEN	Use a peak white pattern. Mode preference: Image Ambiance AV (no Signal, black screen)	 highest output CRT V Collector: TT52,TT62,TT72 (Transistor Version) Pin 9, 12, 15 IT01 (IC Version)	Adjust Screen voltage VG2 120V +/- 5V: 20", 14", 15", 17" 145V +/- 5V : 20" & 21" + = 50% 
FOCUS	FOCUS	 Contrast = 100% Brightness = 0% Test pattern (standard values)		Sharp picture

SERVICE-MODE (GB)

It is necessary to enter the Service Mode in order to carry out alignment of the TV set. Most adjustments can be made with the RCU, except the Usystem, Focus and Screen voltages.

1. Service Mode Access

1.1 With the RCU, switch the TV set into the "**Standby**" mode.
1.2 Switch "**Off**" the TV set by mains supply switch (wait until LED is dark).
1.3 Whilst depressing the RCU "**Blue (VT)**" button, switch "**On**" the TV set using the mains supply switch.
1.4 Release and press once again the RCU "**Blue (VT)** " button, the following "**Set-Up**" menu should be diplayed."

SET-UP	VIDEO	GEOM
TX91 FM20 ---------- TM		

Important : The Service Mode cannot be entered if any equipment is connected to the Scart socket, i.e. pin 8 switching voltage present.

2. Function or Page Selection (GEOM)

2.1 With the RCU Volume "**+**" and "**-**" buttons, highlight the menu containing the function to be aligned.
2.2 Press the RCU "**Blue (VT)**" ⇩ or the middle value one ⋈ ⇧ , select a setting or a page (1, 2, 3....).

3. Switching between Service and TV modes

3.1 Whilst in the Service Mode, normal TV controls are disabled, to enable these controls whilst in the Service Mode (i.e. for channel changing etc.) press the"**TV**" button on the RCU. To return to the Service Mode, press the "**Blue (VT)**" button on the RCU.

4. Alignment and storing new function value

4.1 The current value of the selected function is displayed in a hexadecimal form to the right of the function name. This value is adjusted by means of the RCU Volume "**+**" and "**-**" buttons.
4.2 To STORE the functions new value, highlight **MEMO** and press the RCU Volume "**+**" button.
4.3 The **R-STO(RE)** line allows you to call values stored in NVM with the "-" key.
4.4 Selection the ROM functions downloads the production software default values, these are not very accurate and should only be used in very special cases.
Whilst in the «Service-Mode»,a long press (more than 3s) of the RCU «0» button, will reset the TV to the «factory default conditions».

5. Leaving the Service Mode

5.1 To leave the Service mode either, switch the TV set into "**Standby**" or switch "**Off**" the mains supply.

MODE SERVICE (F)

Le mode service sert au réglage de l'appareil. Toutes les opérations de réglage s'effectuent à l'aide de la télécommande (sauf la tension de système, les réglages de Focus et de tension de grille-écran).

1. Accès au mode service

1.1 Commuter le téléviseur en position de veille avec la télécommande
1.2 Eteindre le téléviseur par l'interrupteur secteur (attendre l'extinction complète du voyant).
1.3 Maintenir la touche bleue enfoncée et mettre simultanément le téléviseur en marche avec l'interrupteur secteur.
1.4 Le menu suivant apparait après avoir appuyé à nouveau sur la touche bleue, (VT).

SET-UP	VIDEO	GEOM
TX91 FM20 ---------- TM		

Attention : Le mode service n'est pas accessible si un appareil est connecté à la prise péritélévision.

2. Sélection de la fonction ou de la page (GEOM)

Par les touches +/- de la télécommande vous pouvez choisir le menu correspondant: SET- UP,VIDEO ou GEOM et avec la touche bleue (VT) ⇩ ou la touche valeur moyenne ⋈ ⇧ , séléctionner un réglage ou une page (1, 2, 3....).

3. Inversion entre modes service et TV

Les fonctions télévision normales ne sont pas utilisables en mode service. Si elles sont nécessaires en mode service (p. ex. changement de programme), la touche (**TV**) permet de commuter en mode TV. Vous pouvez revenir au mode service en appuyant sur la touche bleue.

4. Réglage des fonctions sélectionnées; mémorisation

La valeur momentanée de la fonction sélectionnée est indiquée sous forme hexadécimale à droite, à coté de la position à régler et peut être modifiée avec la télécommande par la touche + ou - .
La ligne MEMO permet de mémoriser les nouvelles valeurs de réglage avec la touche +.
La ligne R-STO(RE) permet de rappeler les valeurs mémorisées en NVM avec la touche "-" .
Les valeurs par défaut du logiciel peuvent être chargées en sélectionnant la fonction ROM . Elles ne constituent cependant qu'une approximation du réglage et ne doivent être utilisées qu'en cas de nécessité.
En mode service une longue pression (plus de 3s) sur la touche «0»reset le TV aux valeurs par défaut des réglages usine.

5. Sortie du mode service

Pour sortir du mode service, commuter le téléviseur en position de veille ou le mettre hors service par l'interrupteur secteur.

SERVICE-MODE (D)

Der Service-Mode wird für den Geräteabgleich benötigt. Alle Einstellungen erfolgen mit der Fernbedienung (bis auf Systemspannung, Fokuseinstellung und Schirmgitterspannung).

1.Service-Mode einschalten

1.1 Mit der Fernbedienung das Fernsehgerät in Stand-by schalten.
1.2 Das Gerät mit dem Netzschalter ausschalten (warten bis LED dunkel ist)
1.3 Die blaue Taste der Fernbedienung gedrückt halten und gleichzeitig das Gerät mit dem Netzschalter einschalten.
1.4 Das folgende Menü erscheint nach erneutem Drücken der blauen Taste

SET-UP	VIDEO	GEOM
TX91 FM20 ---------- TM		

Achtung : Der Service-Mode läßt sich nicht einschalten, wenn an einer Euro-AV-Buchse ein Gerät aktiviert ist, d.h. die Schaltspannung anliegt.

2. Funktionswahl oder Seitenwahl (GEOM)

Mit den Tasten +/- der Fernbedienung können Sie das folgende Menü auswählen: SETUP,VIDEO oder GEOM, und mit der blauen Taste(VT) ⇩ oder der Taste Mittelwert ⋈ ⇧ können Sie eine Einstellung oder eine Seite (1,2,3,....) auswählen.

3. Umschalten zwischen Service- und TV-Betrieb

Im Service-Mode sind die normalen Fernsehfunktionen nicht bedienbar. Werden diese im Service-Mode benötigt (z.B. Programmwechsel), kann mit der Taste (**TV**) in den normalen TV-Betrieb geschaltet werden. Durch Drücken der blauen Taste gelangt man zurück zum Service Mode.

4. Abgleich der gewählten Funktion und Speichern

Der momentane Wert der gewählten Funktion wird hexadezimal rechts neben der abzugleichenden Position angegeben und kann mit der Taste **+** bzw. **-** auf der Fembedienung verändert werden.
Die Änderungen des jeweiligen Menüs können unter MEMO mit der +. Taste gespeichert werden. In der Zeile R-STO(RE) können die in NVM gespeicherten Werte mit der Taste "-" aufgerufen werden.
Im Menüpunkt ROM kann man die Software-Defaultwerte laden.Sie sind aber nur eine grobe Annäherung an den noch vorzunehmenden Abgleich und sollten nur im Notfall verwendet werden.
Im Service-Menü : Durch längeren Druck (mehr als 3 Sek.) wird das Gerät auf die "Factory default werte" zurückgesetzt.

5. Service-Mode verlassen

Zum Verlassen des Service-Mode das Gerät in Stand By schalten oder mit dem Netzschalter ausschalten.

MODO SERVICIO (E)

Se necesita el MODO SERVICIO para ajustar el aparato. Todos los ajustes se hacen con el mando a distancia (a excepción de la tensión del sistema, los ajustes del foco y las tensiones de la rejilla de pantalla).

1. Ajustar el MODO SERVICIO

1.1 Con el mando a distancia conectar a STANDBY el televisor.
1.2 Desconectar el aparato con el interruptor de la red (esperar hasta que el LED se apague).
1.3 Mantener pulsada la tecla azul y conectar el aparato simultáneamente con el interruptor de red.
1.4 El menú siguiente aparece volviendo a pulsar la teda azul.

SET-UP	VIDEO	GEOM
TX91 FM20 ---------- TM		

Atencion : No se puede conectar el MODO SERVICIO cuando en Eurotoma-AV está activado un aparato, es decir, cuando existe tensión de conexión.

2. Selección de las funciones o selección de página (GEOM)

10. Mediante las teclas +/- del telemando usted puede escoger el menú correspondiente: SET-UP, VIDEO o GEOM y con la tecla azul (VT) ⇩ o la tecla valor medio ⋈ ⇧ , seleccionar un ajuste o una página (1, 2, 3....)

SERVICE-MODE (I)

Il Service-Mode è necessario per l'allineamento dell'apparecchio. Tutte le regolazioni si effettuano con il telecomando. (a parte la tensione del sistema, le regolazione del fuoco e le tensioni della griglia schermo).

1. Attivazione del Service-Mode

1.1 Commutare il televisore in stand-by con il telecomando.
1.2 Spegnere l'apparecchio con l'interruttore di rete (attendere finchè il LED è spento).
1.3 Tenere premuto il pulsante blu e accendere contemporaneamente l'apparecchio con l'interruttore di rete.
1.4 Il seguente menu appare non appena si aziona nuovamente il pulsante blu.

SET-UP	VIDEO	GEOM
TX91 FM20 ---------- TM		

Attenzione : Il Service-Mode non si può attivare se è attivato un apparecchio collegato alla presa di peritelevisione AV, cioè se è presente la tensione ausiliaria.

2. Scelta della funzione o selezione pagina (GEOM).

Per i tasti +/- del telecomando, potete scegliere il menu corrispondente: SET-UP, VIDEO o GEOM e con il tasto blu (VT) ⇩ o il tasto valore medio ⋈ ⇧ , una regolazione o una pagina (1, 2, 3, ecc.)

3. Commutazione fra funzione Service-Mode e TV

Nella modalità Service-Mode non si possono attivare le normali funzioni televisive. Se occorre richiamarle in Service-Mode (ad es. se si vuole cambiare il programma), si pud attivare la normale modalità TV con il pulsante (**TV**). Premendo il pulsante blu si riattiva il Service-Mode.

4. Taratura della funzione scelta e memorizzazione

Il valore momentaneo della funzione scelta viene indicato in formato esadecimale a destra, accanto alla posizione da allineare e può essere cambiato con il pulsante + o - del telecomando.
Le modifiche effettuate nel relativo menu si possono memorizzare in MEMO con il pulsante **+**. La linea R-STO(RE) permette di richiamare i valori memorizzati in NVM con il tasto -..
Nell'opzione di menu ROM si possono caricare i valori di default del software. Essi rappresentano però una taratura approssimativa prima di eseguire quella definitiva e si dovrebbero usare solo in caso di emergenza.
Mentre si è nel «Menu Service», una lunga pressione (più di 3s) del tasto «0» riporterà il TV alle «condizioni di default di fabrica».

5. Disattivazione del Service-Mode

Per disattivare il ServiceMode, commutare l'apparecchio in stand-by o spegnerlo con l'interruttore di rete.

3. Conmutar entre funcionamiento Servicio y TV

En el MODO SERVICIO las funciones de televisión normales no pueden operarse. Si se necesitan éstas en MODO SERVICIO (p.ej., cambio de programa), con la tecla (**TV**) puede conmutarse a la operación TV normal.
Pulsando la tecla azul se vuelve al MODO SERVICIO.

4. Ajuste de la función elegida y almacenamiento

El valor momentáneo de la función elegida es indicado de modo hexadecimal a la derecha, al lado de la posición a ajustar, y puede cambiarse con la tecla **+** o bien **-** en el mando a distancia. Los cambios del menú respectivo pueden almacenarse bajo MEMO con la tecla +.
La línea R-STO (RE) permite recuperar los valores memorizados en NVM con la tecla "-".
En el punto de menu ROM se pueden cargar los valores por defecto del software. Sin embargo, son sólo una aproximación basta al ajuste aún a realizar y deben usarse sólo en caso de emergencia.
En modo servicio, si se mantiene pulsada (más de 3 seg.) la tecla «0» toma por defecto los valores de «ajuste en fábrica».

5. Salir del MODO SERVICIO

Conmute el aparato a STANDBY a fin de salir del MODO SERVICIO o desconectar con el interruptor de la red.

TV mono :

SET-UP					
Software code and configuration					
BRAND	1	2	3	NONE	
NORM	B	BD	BLD	BIL	BL I
SUB-VOL	- 2 / 2			1	
- R-STO	+ MEMO			O	ROM

TV stereo :

SET-UP					
Software code and configuration					
BRAND	1	2	3	NONE	
NORM	B	BD	BLD	BIL	BL I
DEC PR04	On			Off	
- R-STO	+ MEMO			O	ROM

VIDEO		
page 1		
SUB-BRT	7 / 7	0

VIDEO *page 2*		
R-DC	00-3F	24
G-DC	00-3F	12

VIDEO *page 3*		
R-DRV	00-3F	1F
G-DRV	00-3F	1E

VIDEO *page 4*		
B-DRV	00-3F	1C
	PEAK	- / +

VIDEO *page 5*		
SUB-COL	-7 / 7	2
- RESTORE	- MEMO	0 ROM

GEOM		
H - PHA	00 - 3F	0E
V - AMP	00 - 7F	02
V - LIN	00 - 0F	33
H - PHA	00 - 3F	29
H - AMP	00 - 3F	15
- R-STO	+MEMO	0 ROM

Test Bar pattern used : 4/3 with geometric circle.
adjust separate for 4/3 and 16/9 format

SET-UP	
BRANDT	**Brand Selection** 1 : TELEFUNKEN 2 : SABA/FERGUSON/ 3 : THOMSON/ NORDMENDE NONE : NON DEFINI
NORM	**Standards** B = BG PAL SECAM (Sound FM 5,5MHz)
	I = I PAL (UK/IRELAND) (Sound FM 6MHz)
	L = L SECAM (France) (Sound AM 6.5MHz)
	D = DKK' SECAM (SOUND FM 6.5 MHZ)
	M = NTSC M (Sound FM 4.5MHz)
DEC PR4 (TX91G stereo)	NICAM From Canal+ decoder On : Enable OFF : Disable The special sound path handling for Canal+ on PRO4
SUB-VOL (TX91G mono)	Volume offset adjustment: V = 50% Ve (AV) = 500mV / 1kHz Adjust SUB-VOL Vs (Z=16Ω) =0,9VRMS

VIDEO		
SUB-BRT ☼ + ◑ + ◑ = 50%		black
R - DC*		grey
G - DC*		grey
R -DRV**		white
G - DRV**		white
B - DRV**		white
PEAK* PEAK**** ☼ + ◑ = 50% ◑ = 100%	**CRT Pin 6,8,11** **Oscillo. or colourimeter**	4/3 / Nits: 10" 600; 14" 15" 550; 17" 28" 490
SUB-COL	**75% PAL Colour-bar Test pattern**	Colour offset adjustment Saturation=100% CRT Pin 11(B) (Oscillo.1)

Notes :

** adjust and stop separate for RF BG, RF L Norm, AV and RGB mode.

*** After PEAK white adjustment control brightness and cut off setting. Repeat the adjustments if necessary.

GEOM		
H - PHA		
V - Amp 50Hz		
H - AMP 60Hz		
V - Pos		
OFFSET		**V- AMP OFFSET ADJUSTMENT**

Table : Software Code

Software Realease code	Description	Version No.
TX91 FM - (YY)	TX91G Europe Mono Software (YY)	(YY) = 10, 11,12 ....20, 21
TX91 FS - (YY)	TX91G Europe Stereo Software (YY)	(YY) = 10, 11,12 ....20, 21
TX91 FAM - (YY)	TX91G Asia Mono Software (YY)	(YY) = 10, 11,12 ....20, 21
TX91 FAS - (YY)	TX91G Asia Stereo Software (YY)	(YY) = 10, 11,12 ....20, 21

TV Configuration Code :

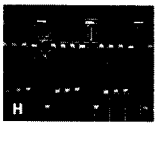
T	TEXT MODULE
S	STEREO MODULE
M	MONO SET

Oscillos.1

blue k (PAL)

correct

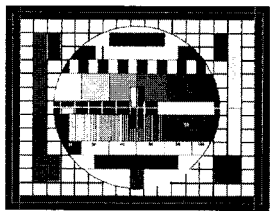
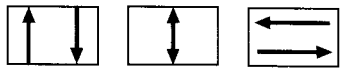
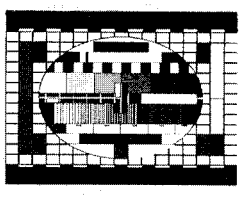
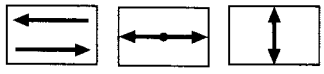
blue k (PAL)

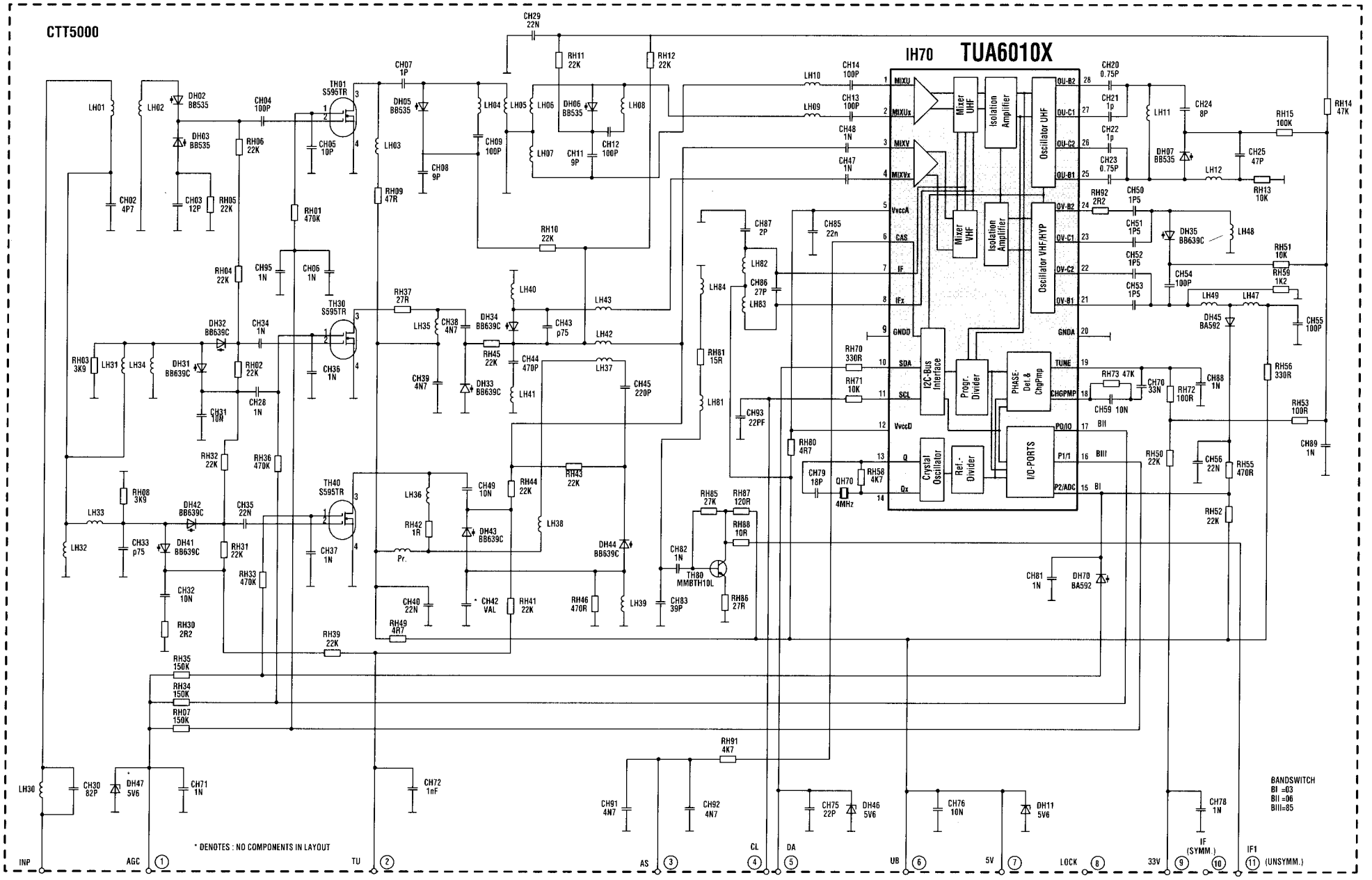


incorrect

GEOMETRY MODE ALIGNMENT - RECEIVER : TV WITH 4/3 TUBE

Signal : 4/3 test pattern 50Hz - 60Hz

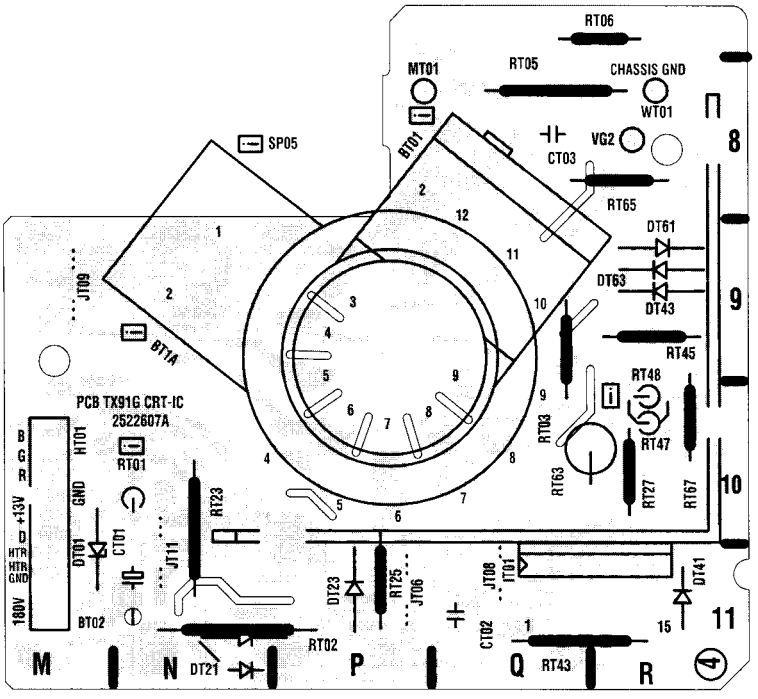
4 / 3 standard mode		overscan V=107% , H=107%  1 - Adjust the horizontal centering 2 - Adjust vertical centering 3 - Adjust picture height to V = 107% - Repeat if necessary with 60 Hz
16 / 9 standard mode		 1 -Adjust horizontal centering (reference : screen edge) 2 - Adjust the vertical amplitude until the oval heigh is 75% of the oval width. - Repeat if necessary with 60 Hz


CTT5000
IH70 TUA6010X
* DENOTES : NO COMPONENTS IN LAYOUT
BANDSWITCH
BI =03
BII =06
BIII=85
INP
AGC
TU
AS
CL
DA
UB
5V
LOCK
33V
IF (SYMM.)
IF1 (UNSYMM.)

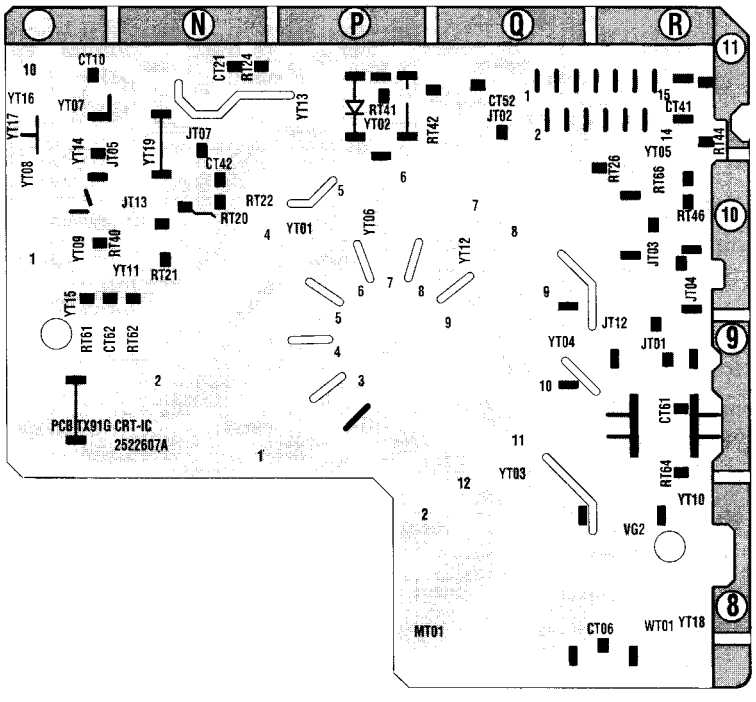
VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEUR VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO

- INTEGRATED CIRCUIT VERSION -

COMPONENT SIDE - COTE ELEMENTS - BESTÜCKUNGSSEITE
LATO COMPONENTI - LADO COMPONENTES

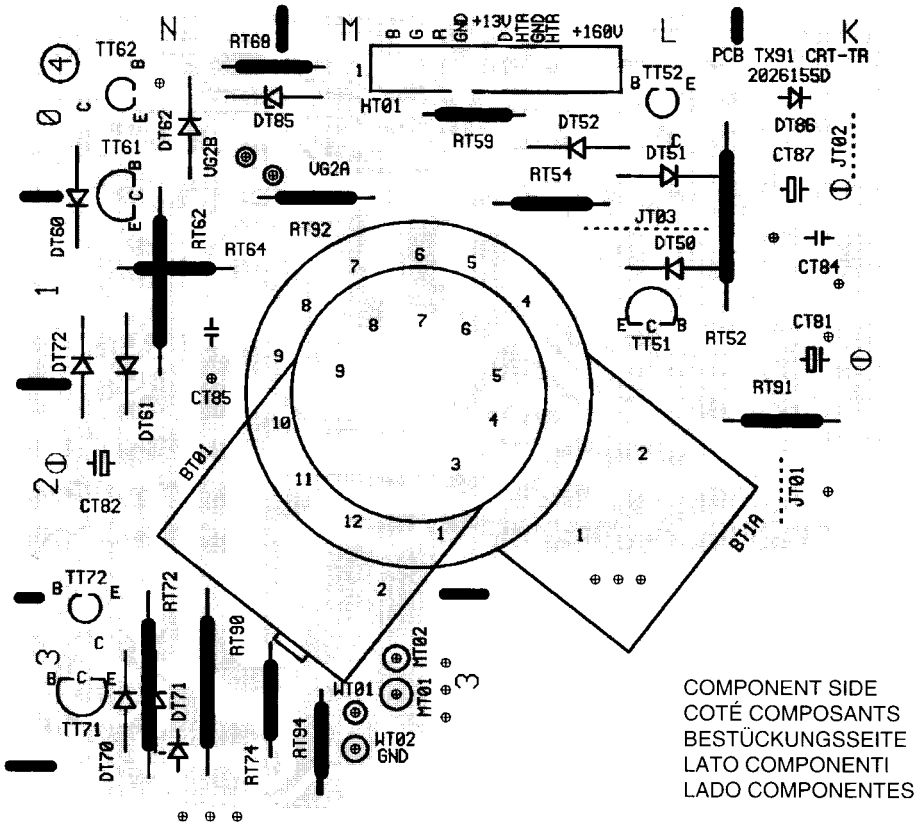


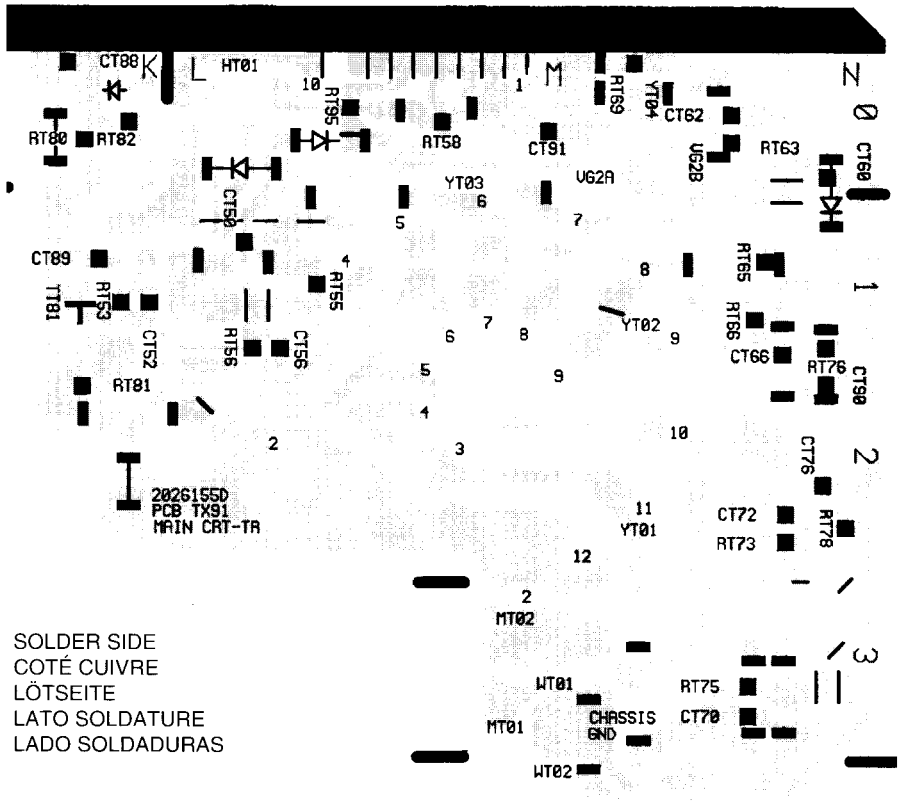
SOLDER SIDE - COTE CUIVRE - LÖTSEITE
LATO SALDATURE - LADO DEL COBRE



VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEUR VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO

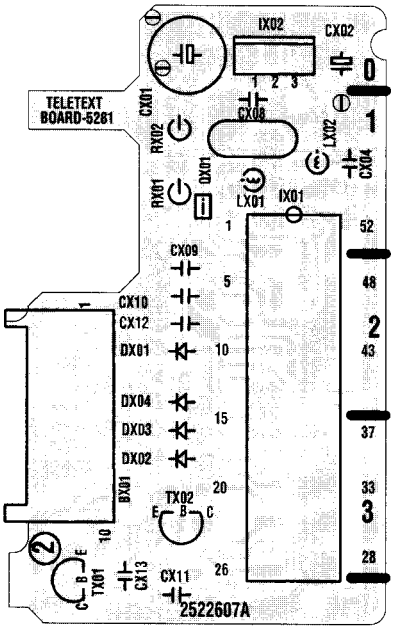
- TRANSISTOR VERSION -



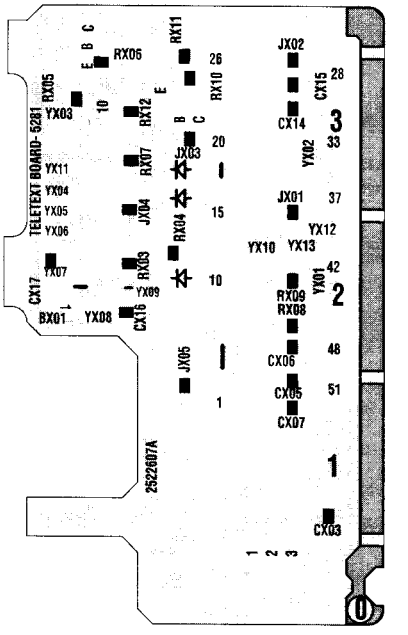


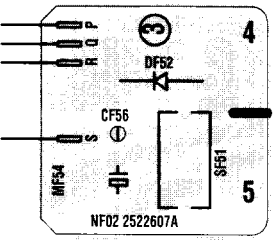
TELETEXT MODULE - MODULE TELETEXTE - VIDEOTEXT MODUL
MODULO TELEVIDEO - MODULO TELETEXTO

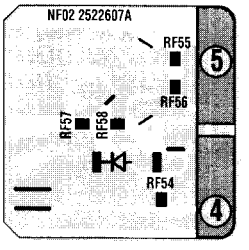
COMPONENT SIDE - COTE ELEMENTS - BESTÜCKUNGSSEITE
LATO COMPONENTI - LADO COMPONENTES

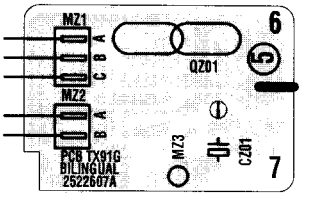


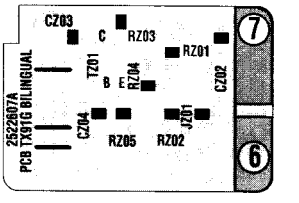
SOLDER SIDE - COTE CUIVRE - LÖTSEITE
LATO SALDATURE - LADO DEL COBRE



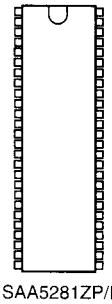








INTEGRATED CIRCUITS AND TRANSISTORS OUTLINE - CIRCUITS INTEGRES ET TRANSISTORS
INTEGRIERTE SCHALTUNGEN UND TRANSISTOREN - CIRCUITI INTEGRATI TRANSISTOR
CIRCUITOS INTEGRADOS Y TRANSISTORES



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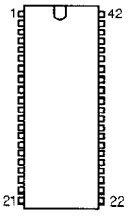

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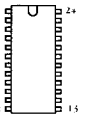
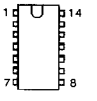
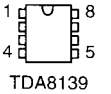


STV8224 A2



STV8225



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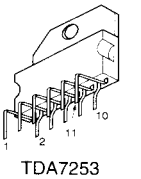

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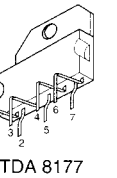

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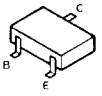
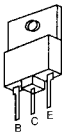


BC 847B
BC 858 B/C
BC857
MMBTH01L
DTC144EK

BF 422
BF423
2SC2655

BC 337
BC 548B
BC 558B

E B C
MPS750P



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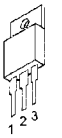
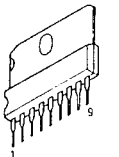
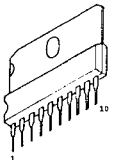
BUH515D



L7805



TEA 5101B



TDA1771

ABBREVIATIONS - ABREVIATIONS - ABKÜRZUNGEN - ABBREVIAZIONI - ABREVIACIONES

● **ABL**	AVERAGE BEAM LIMITATION
● **AF**	AUDIO FREQUENCY
● **BCL**	BEAM CURRENT INFORMATION
● **DEGAUSS / DEG -COIL**	DEGAUSS SIGNAL
● **FB**	FAST BLANKING
● **H**	POSITION FLY BACK PULSE
● **HEATER / HTR**	HEATER VOLTAGE
● **I-CUT**	CUTOFF CURRENT
● **IR**	DATA FROM INFRARED RECEIVER
● **SCL**	SERIAL CLOCK
● **SDA**	SERIAL DATA
● **SIF**	SOUND IF
● **V AMP**	VERTICAL AMPLITUDE
● **VTUNE**	TUNING VOLTAGE
● **V POS**	VERTICAL POSITION
● **VSYNC /-V**	VERTICAL DEFLECTION SIGNAL

THOMSON MULTI MEDIA

90° TELEVISIONS FITTED WITH THE TX91 FRAME STRUCTURE

Click here to go to the index page

CFT CENTRE DE FORMATION TECHNIQUE

SOMMAIRE TX91

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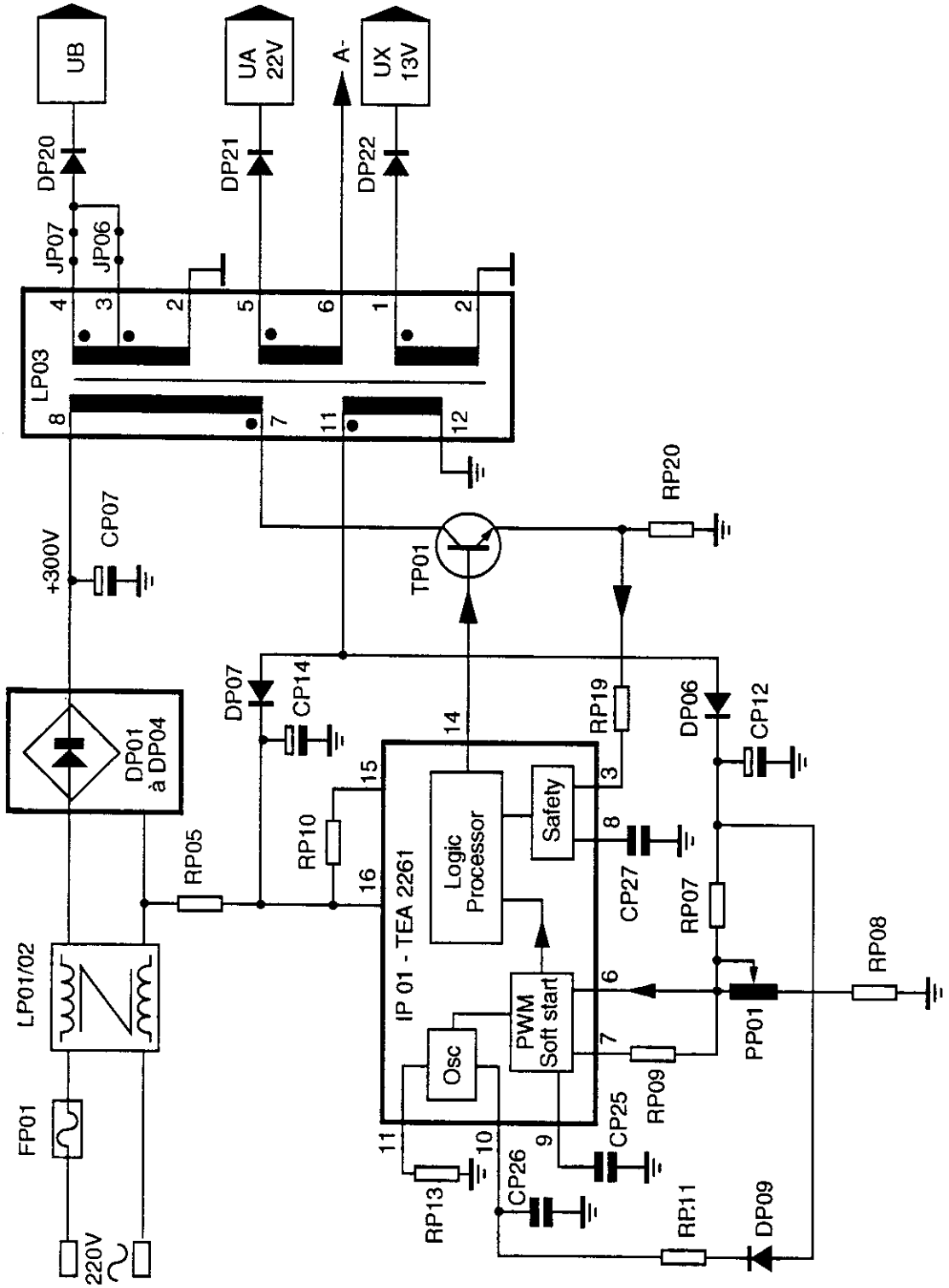
LUMINANCE, CHROMINANCE AND RGB TREATMENT 75

CRT MODULE 87

TX91G Power Supply

POWER SUPPLY



CENTRE DE FORMATION TECHNIQUE

TX 21G

THOMSON MULTI MEDIA

GENERAL

This is a fly-back type, fixed-frequency chopped power supply carried by an oscillator incorporated into the TEA2261 printed circuit (nominal frequency @ 23, 4 KHz).

Unlike the frame structures previously using this circuit (ICC7, IDC2), the primary regulation mode has been adopted both in standby/suspend mode and in steady state. There is, therefore, only one regulation loop.

The voltage coming from the 11-12 primary winding after rectification and filtering by the DP06-CP12 network is the image of the energy stored in primary as well the energy consumed overall in secondary. This information is therefore adjusted by PP01 and then applied to pin 6 of IP01 to be compared to an internal reference. The consequence for output 14 is a fixed-period and variable cyclic rate strobe which determines the saturation time of the TP01 chopper and therefore the quantity of energy stored.

In standby mode, since the consumption of the secondaries is very low, the regulating device hits the lower limit of the saturation time of the chopper before sufficiently reducing the energy stored. Consequently, there is a BURST mode which injects energy in "packets" and thus makes possible a balance between the energy supplied and the energy consumed.

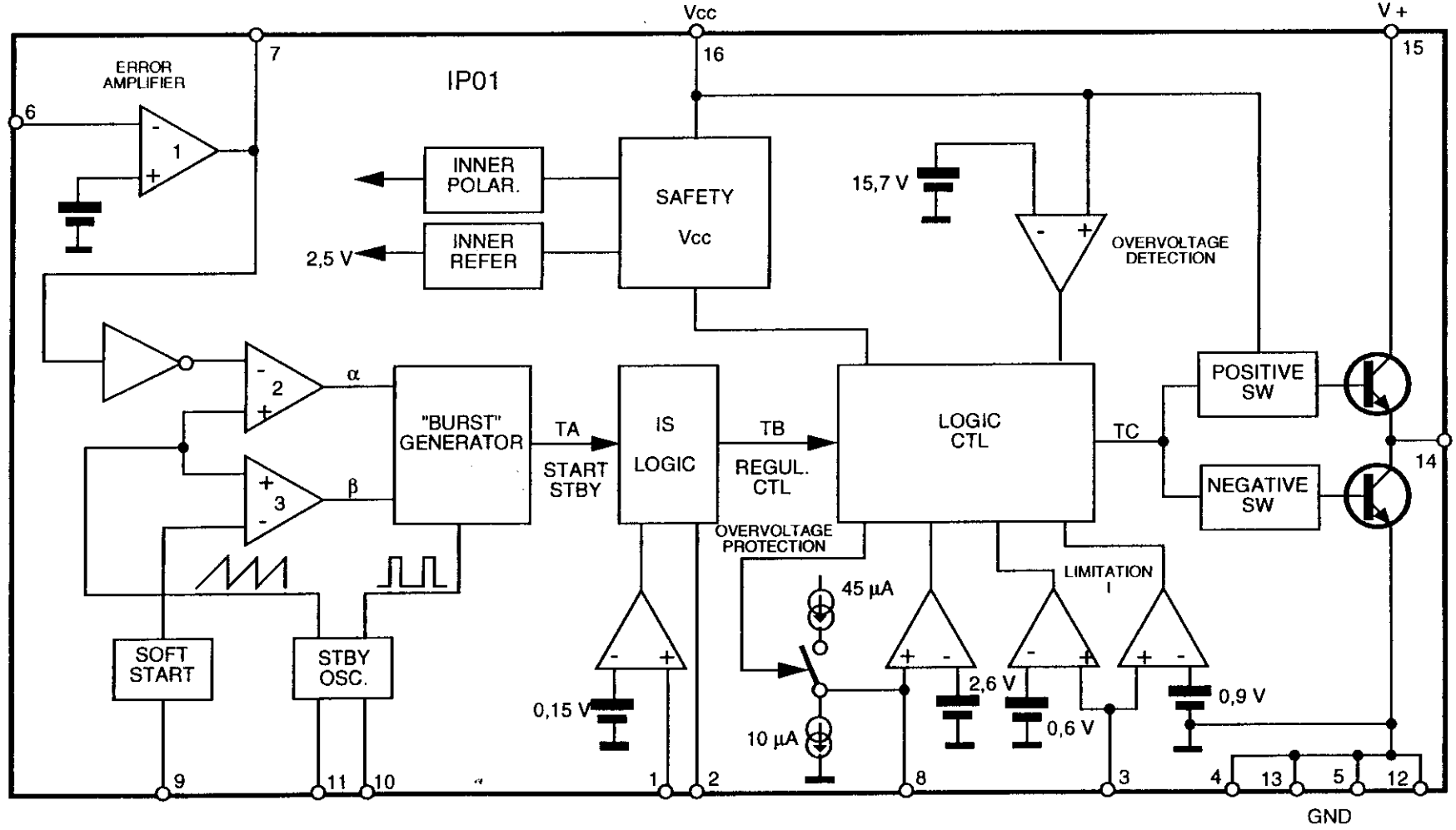
On the secondaries, three windings carry:

- the UB line time base mains voltage (109 to 116V),
- the UA audio mains voltage (22V) which also prefeeds the driver stage (subsequently relayed by the +24V of the BTL),
- the UX standby voltage (13V) intended for supplying the microcontroller unit.

Power Supply: self oscillating.

- P.S : • frequency depends on load ON MODE : 60kHz 80 Khz
  St.by MODE : 26 Khz.

★ Οι διαφορές κύριων σημείων της τροφοδοσίας της TX 21G



THOMSON MULTI MEDIA

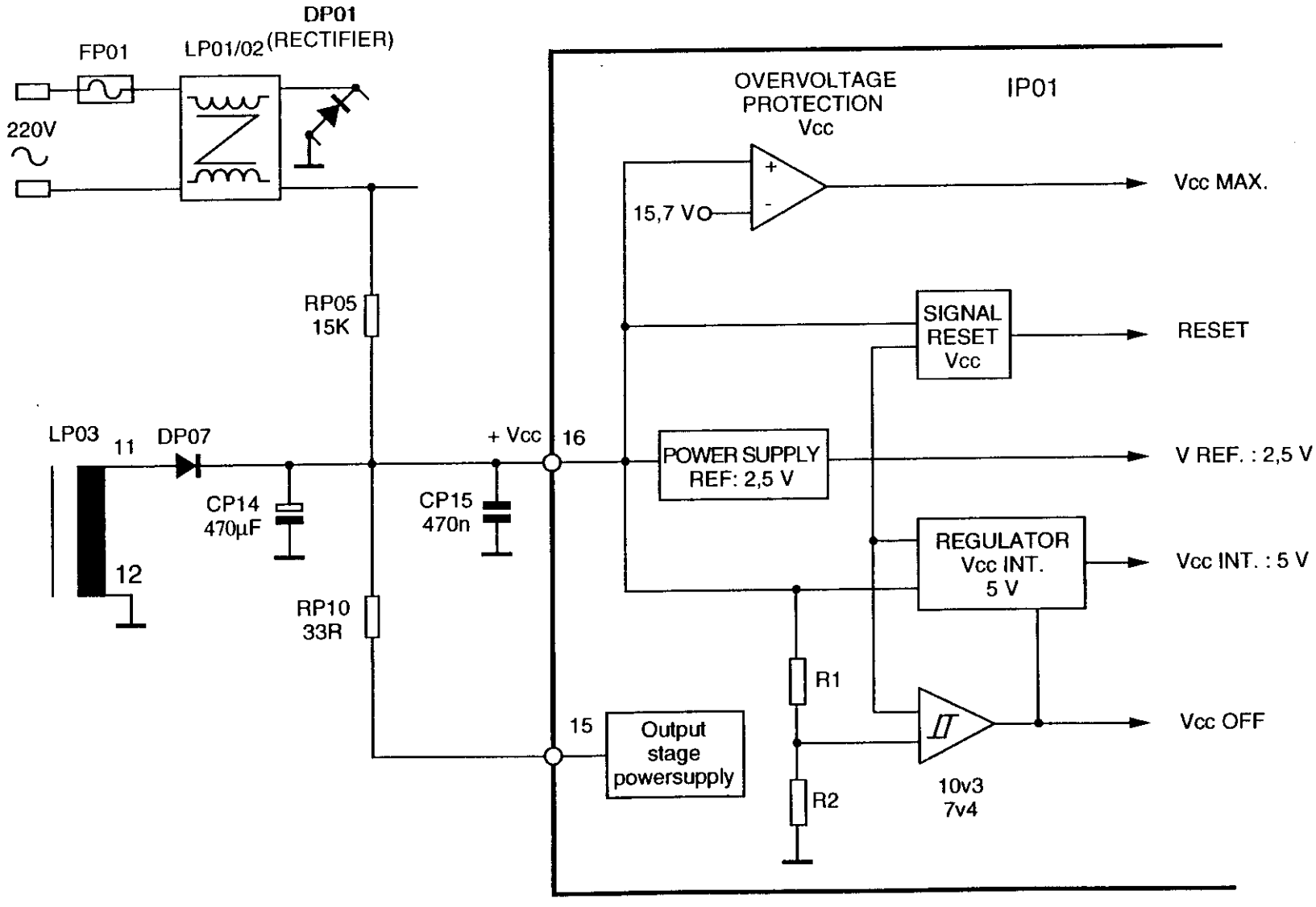
TEA2261 INTEGRATED CIRCUIT

The TEA2261 integrates the different stages necessary for controlling and regulating a chopped power supply. It includes:

- an internal voltage regulating and reference circuit,
- an RC oscillator,
- an error amplifier,
- a pulse width modulator (PWM) and progressive start-up,
- a transformer demagnetisation monitoring device,
- a current threshold limiting detector,
- a logical limitation and safety device management system,
- a high-level stage enabling a power transistor to be coupled directly.

Thanks to the automatic commutation of the BURST mode in the event of low consumption, this circuit ensures a wide range of regulation from a few watts to a value of around 200W.

With this circuit not being used in its complete configuration in the present case, in addition to the afore-mentioned demagnetisation monitoring stage, the secondary regulation input (pin 2) is also connected to the earth.



THOMSON MULTI MEDIA

CENTRE DE FORMATION TECHNIQUE

TEA2261 "POWER SUPPLY

The circuit carries several voltages and a fair amount of service information depending on the development of the dcV No. 16 pin voltage.

As soon as the +dcV reaches about 4.5V, a reference of +2.5V is generated.
For +dcV ≤ 5, 5V, a RESET impulse is developed.
For +dcV ≥ 10, 3V (dcV start), a Vcc int internal supply of 5V is validated. This stabilised voltage enables the circuit to remain very efficient within a wide voltage range in pin 16.
This dcV start also causes a transition to "dcV off" high state, and enables the management logic, limitations and safety devices to be validated so as to authorise impulse output in pin 14 as long as this +dcV remains greater than +dcV stop (7.4V type).

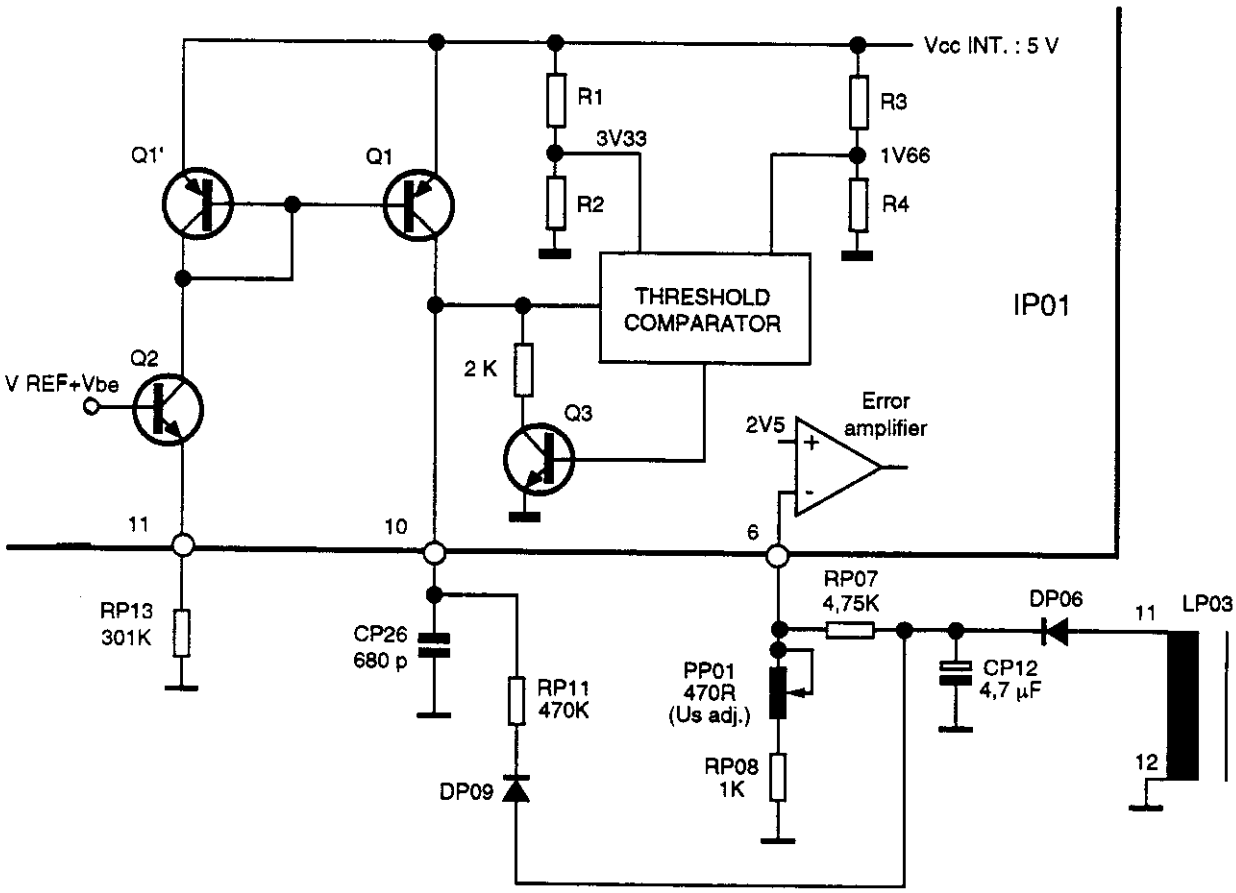
The pin 16 supply comes:

- At start-up, from the single-alternation rectification of the mains by the RP15-CP14-DP01 mesh.

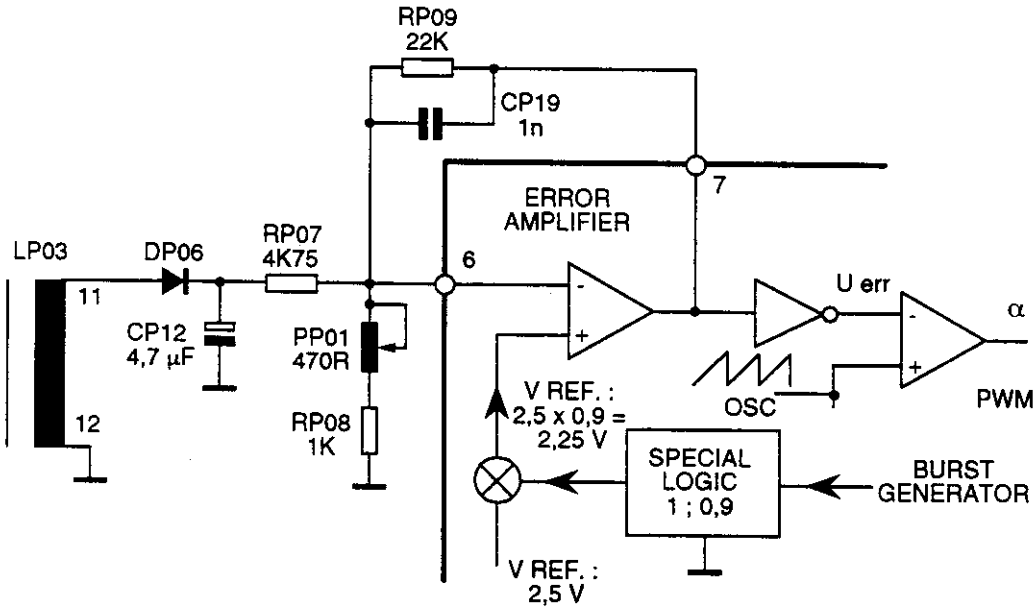
- In steady state and standby mode by the 11-12 winding of LP01 after rectification by the DP07-CP14 cell.

For +dcV ≥ 15, standard 7 dcV, transition to the dcV max. high state and safeguarding of the circuit by control logics.

The RP10 carries the final stage supply (pin15) and fixes its maximum current.



OSCILLATOR AND SWITCHING CIRCUIT



ERROR AMPLIFIER AND REGULATION CIRCUIT

OSCILLATOR

This oscillator determines the commutation frequency of the chopper.
It comprises:

- A Q1, Q1', Q2 current generator whose value is determined by the RP13 resistance (pin 11).

$$I_{charge} = 2.5V / RP13$$

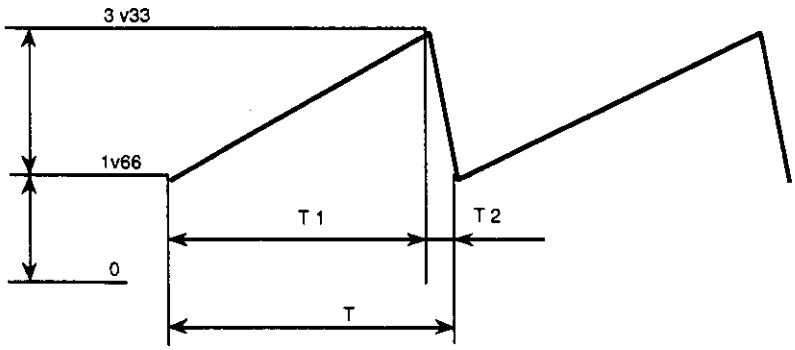
This current charges the CP26 capacitor (pin 10).

- A threshold detector which analyses the CP26 voltage:

1st threshold (dcV int. 2/3 = standard 3.33V): commutation of the Q3 transistor and discharging of CP26 by the 2KΩ internal resistance.

2nd threshold (dcV int. 1/3 = standard 1.66V): blocking of the Q3 transistor Q3 and charging of CP26 by the current generator.

The overall result is a saw tooth.

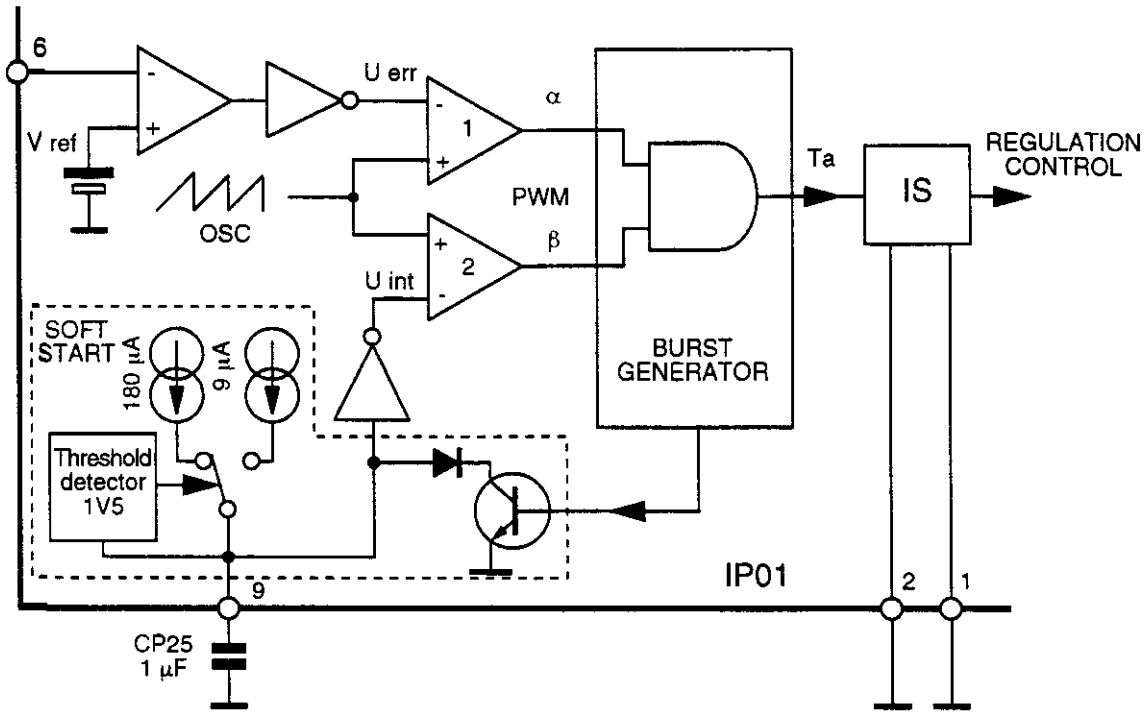


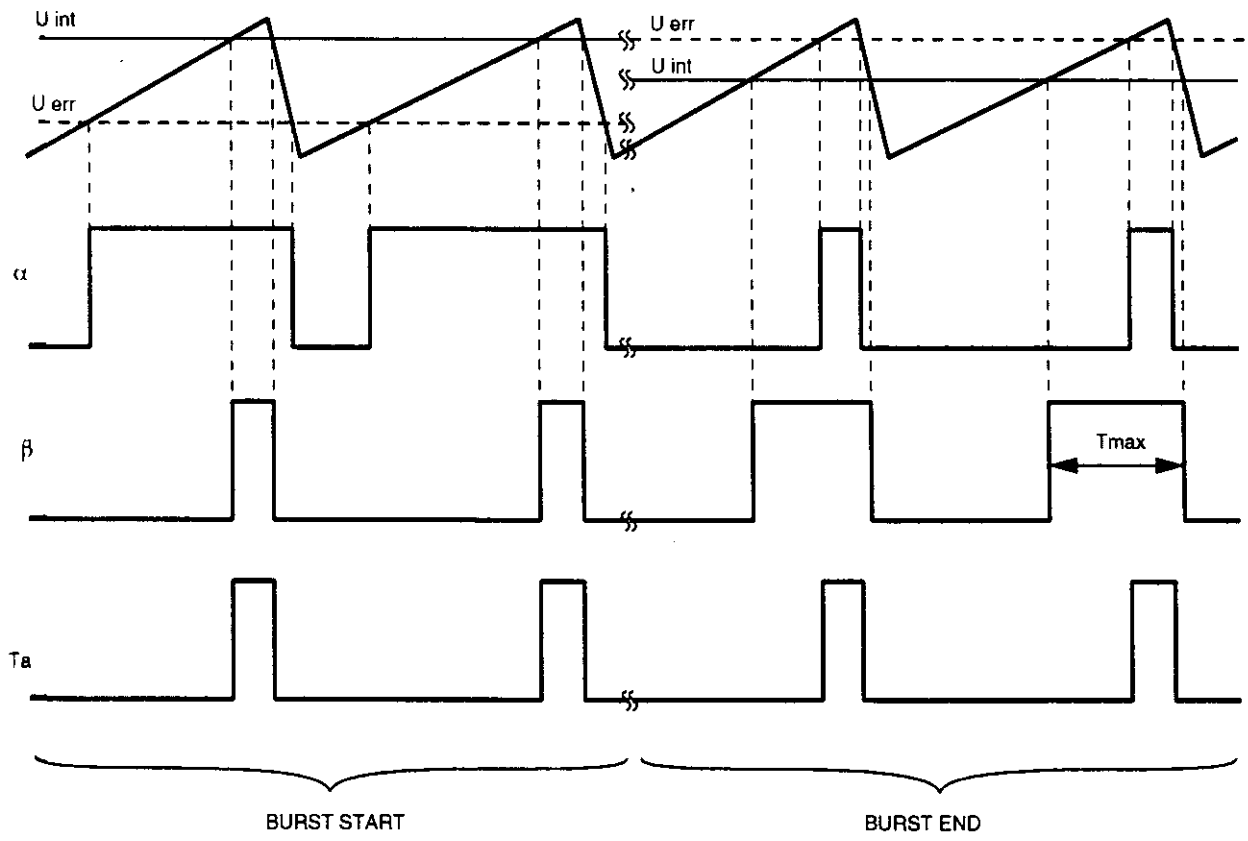
Role of the RP11 resistance.

In the start-up phase, with the secondary voltages being low, there is the risk of the power restoration time exceeding the oscillator's nominal period. The latter therefore starts up with a low frequency (about 2 KHz) due to the high value of RP13. Then the voltage appearing at the CP12 terminals, via RP11, accelerates the charging of CP26 and brings the frequency of the oscillator to its nominal value of 28 KHz.

ERROR AMPLIFIER

This carries out primary regulation by comparing a fraction of the image of the secondaries (11-12 winding, DP06, CP12) with the internal reference and by amplifying the error.
Its gain is determined in a closed loop by the RP09 / RP08 / PP01 components. The adjustable PP01 enables UB to be set (the line time base supply must be monitored in steady state).
The resulting signal is put back into phase with the entry signal by a circuit changing switch before being applied to the PWM modulator.
In BURST mode, the internal reference is commutated between two values (2.5V and 2.25V) so as to configure the loop in overvoltage or undervoltage load (clean stopping and restarting of the regulation loop).

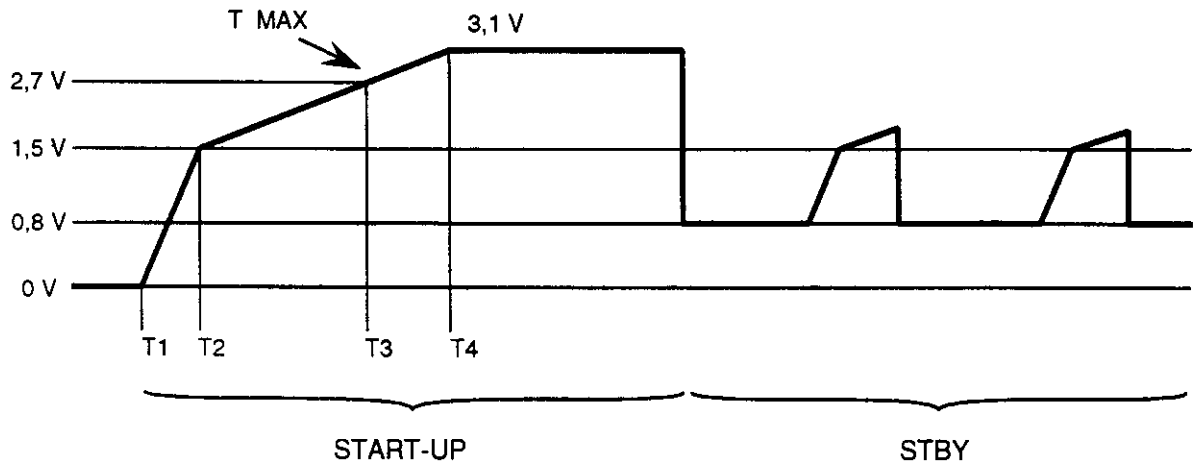

6
V ref
U err
α
1
PWM
β
2
U int
OSC
Ta
IS
REGULATION CONTROL
SOFT START
180 µA
9 µA
BURST GENERATOR
Threshold detector 1V5
IP01
9
2
1
CP25 1 µF


SAW TOOTH pin 10
U int
U err
U err
U int
α
β
Tmax
Ta
BURST START
BURST END

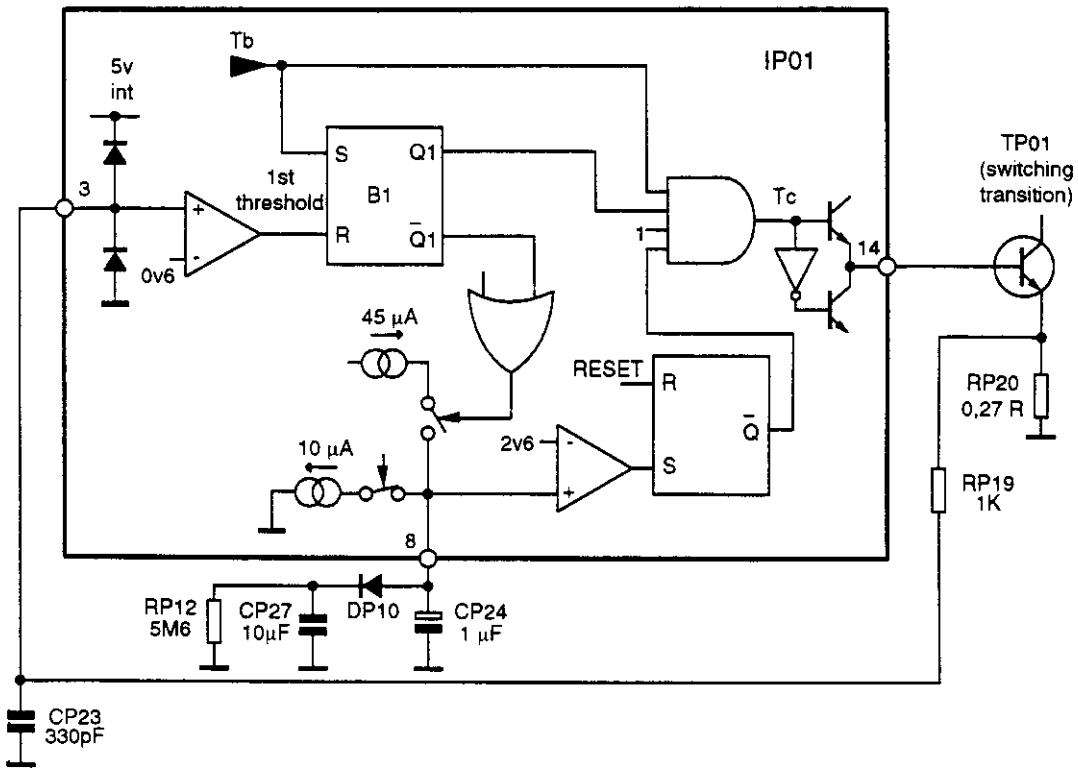
PULSE WIDTH MODULATOR (PWM) AND PROGRESSIVE START-UP

A 1st PWM compares the error voltage to the saw tooth of the oscillator in order to develop a control strobe (α signal).
A second PWM defines the authorised maximum cyclical ratio (60%) by comparing the same saw tooth to an internal voltage (β signal).
A logical "ET" between these two signals carries the narrowest strobe.

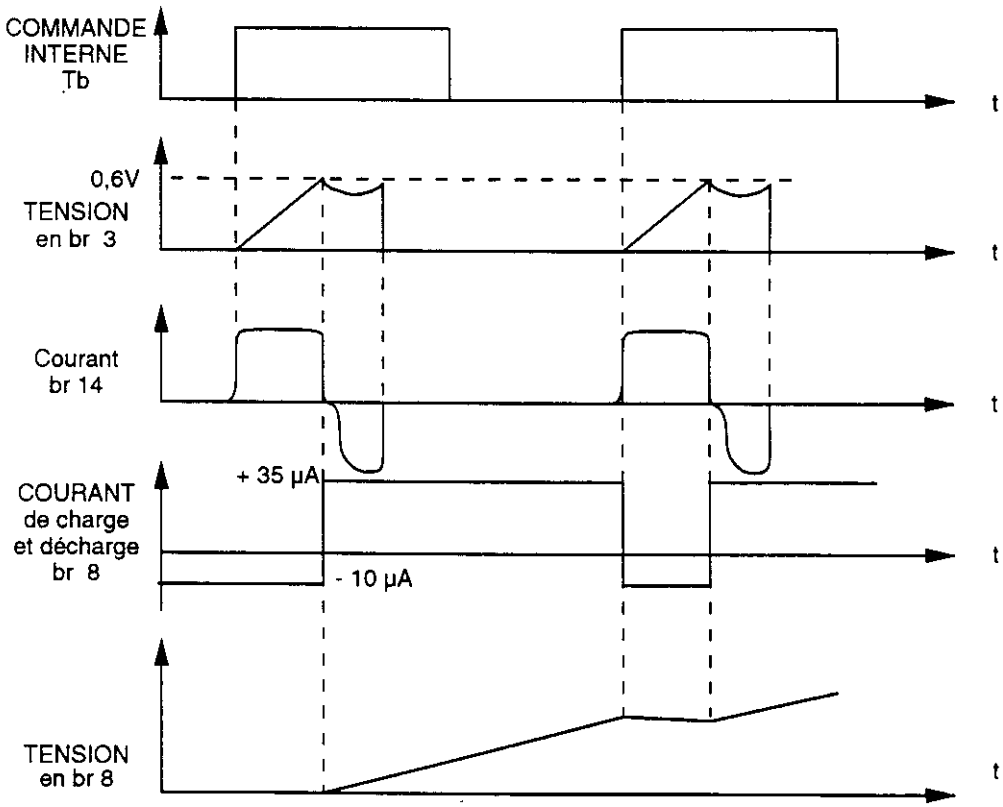
A progressive start-up is ensured when the modulator is put into operation and at the beginning of each burst by monitoring of the internal voltage and therefore of the width of the β signal:
- From T1 to T2, the CP25 capacitor (pin 9) is charged by an internal generator carrying a 180 µA current. There is no current at the CI output.
- At T2, the voltage at the CP25 terminals reaches 1.5V, the charging current changes to 9 µA, strobes appear at pin 14 corresponding to the β signal which widens ($T\beta < T\alpha$).
- Between T2 and T3, the progressive start-up circuit ceases to limit the width of the strobes, the primary regulation loop is established ($T\alpha < T\beta$).
- At T3, the 2.7V typical voltage fixes the maximum cyclic ratio (60%).
- At T4, the CP25 charge stabilises at 3.1V. This voltage will fall back to 800mV at the end of start-up and at the end of each burst.



The signal available at the burst generator output then passes through an IS switching circuit. With this stage intervening only within the framework of a secondary regulation, it is transparent in this application (pins 1 and 2 to the earth).



SAFETY, 1ST THRESHOLD



SAFETY TIMING DIAGRAM, 1ST THRESHOLD

LIMITATIONS AND SAFETY DEVICES

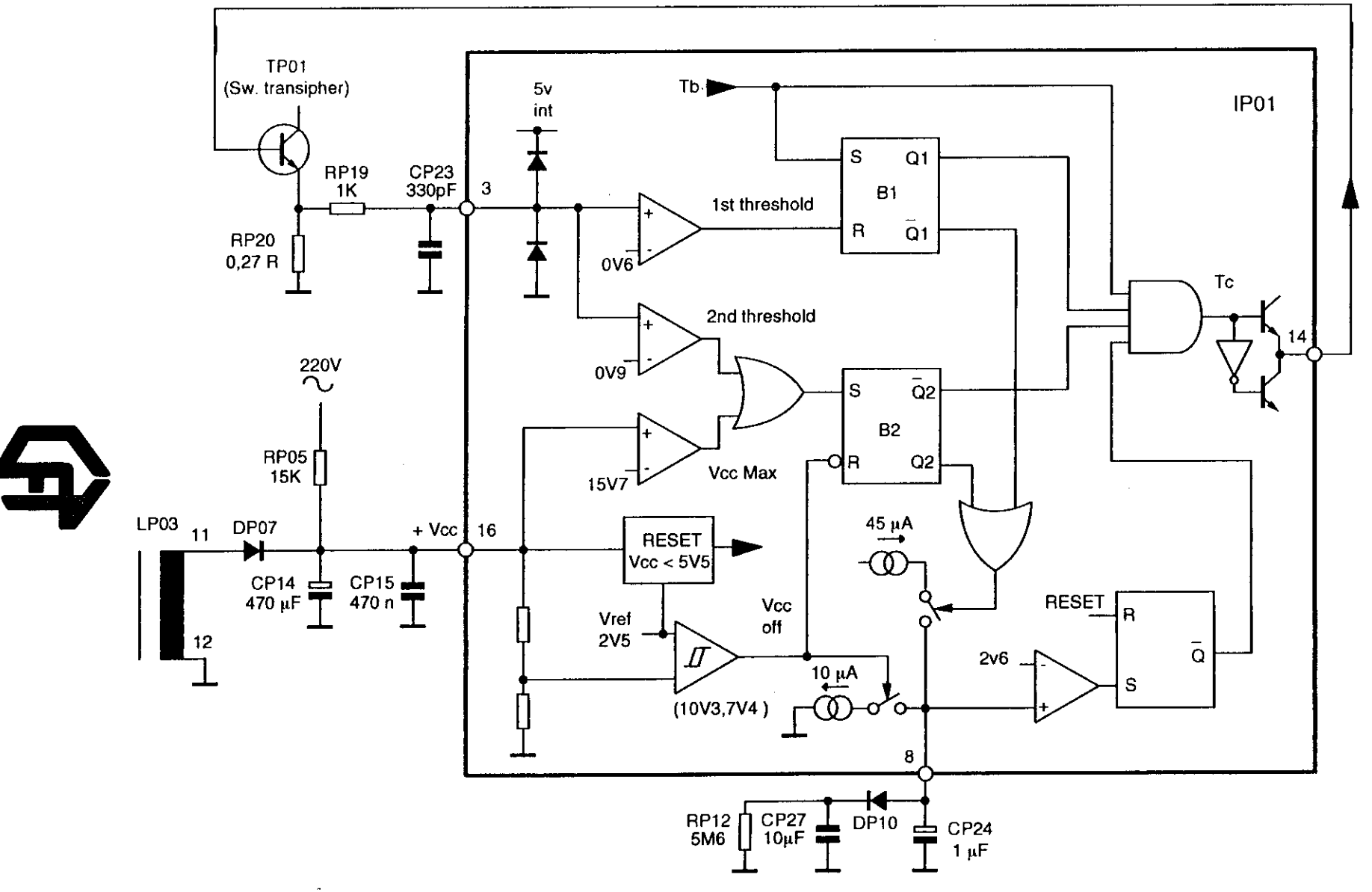
The TEA2261 has 2 types of safety device:
- Current safety device with 2 pin 3 detection thresholds,
- Pin 16 voltage safety device.

CURRENT LIMITATION AND SAFETY DEVICE FOR TP01

The image of the current flowing through TP01 is collected at the RP20 resistance terminals and applied to pin 3 of the TEA2261. A circuit made up of a double threshold comparator then analyses this piece of information.

SAFETY, 1ST THRESHOLD
When the voltage on pin 3 reaches the first threshold of 0.6V, the triggering of the R entrance to the B1 sweep circuit inhibits the Tc control (ET door), the pin 14 impulse of the CI falls to 0 and the current is inverted. TP01 is blocked, you have to wait for the next Tb impulse in order to again validate the ET door and control the commutation transistor (limited to working on a time-by-time basis).

The CP24 (pin 8) is permanently discharged by a 10µA active current generator as soon as the CI starts up (Vcc off = 1). When the first threshold is triggered, the B1 sweep circuit connects (OU door) a 45µA generator to pin 8, hence the charging of CP24 by a current of 45 - 10 = 35mA until the following impulse which modifies the status of the B1 sweep circuit.
Thus, should this phenomenon occur several times running, the CP24 charge reaches 2.6V. This level is detected by a second comparator which definitively inhibits the TP01 control by means of a RS sweep circuit. A general reset is then necessary to start up the circuit again (start/stop mains to obtain dcV ≤ 5.5V).
Should the triggering of the safety device come to a stop before the pin 8 voltage reaches 2.6V, CP24 is discharged and the power continues to be supplied. This makes it possible to avoid spurious releases on momentary overvoltages (arkings, for example). A further safety device against spurious releases is obtained by adding the CP27 / RP12 cell in parallel on CP24 by means of the DP10 diode.



THOMSON MULTI MEDIA

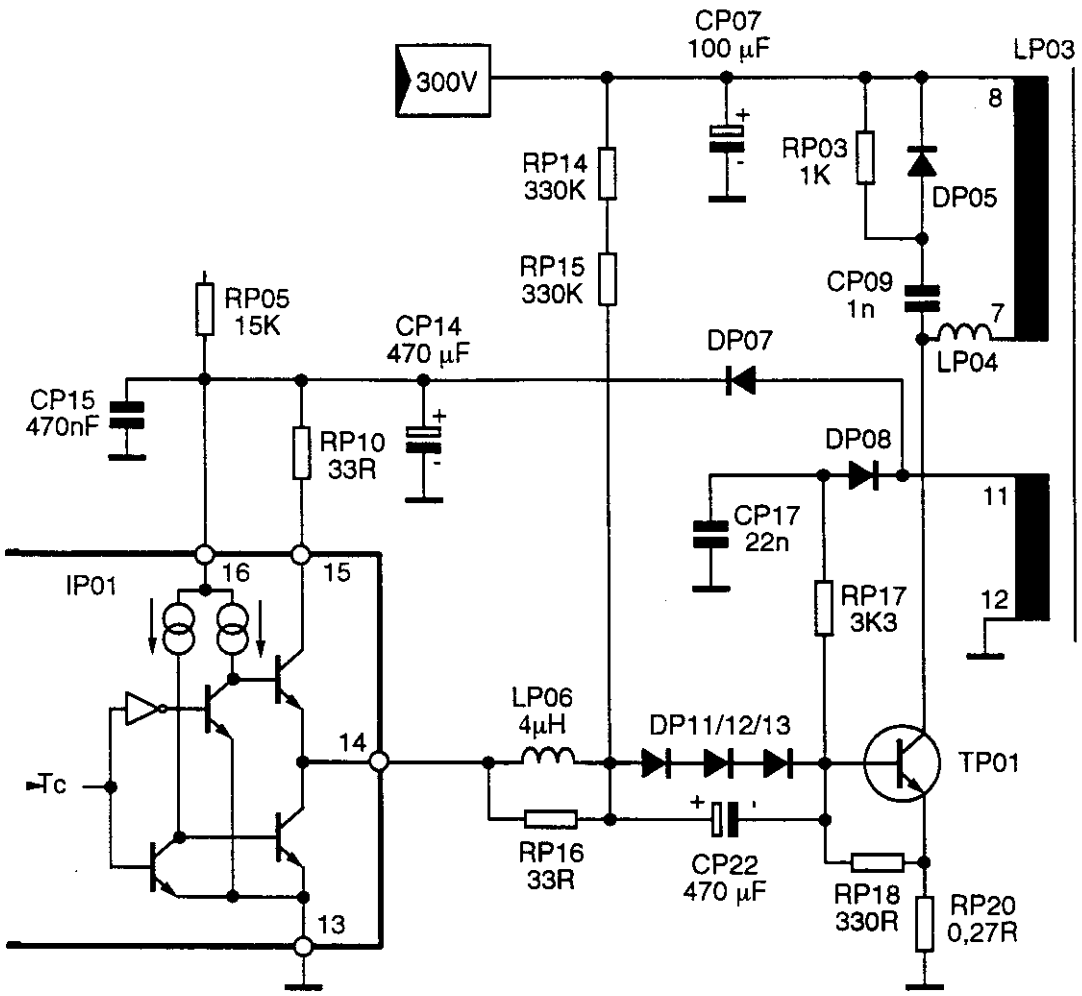
SAFETY, 2ND THRESHOLD

In the event of considerable overvoltage (dc on Us), the primary current may continue to increase despite the action of the first threshold.

A second threshold is then reached (0.9V). In this case, a third comparator activates the B2 sweep circuit, which blocks the Tb impulse (ET door) and triggers the 45µA generator. The TP01 control is inhibited.
The CP24 / CP27 capacitors are then charged at a voltage of 2.6V before the B2 sweep circuit can be reinitialised by dcV off. A general reset is necessary to start up the circuit again (M/A mains).

VOLTAGE SAFETY DEVICE

A voltage greater than 15.7V on pin 16 triggers the B2 sweep circuit by means of a comparator and an OU door. Consequently, we find ourselves once again in the same scenario as with the 2nd threshold, and a general reset is necessary to start up the circuit again.



CENTRE DE FORMATION TECHNIQUE

HIGH-LEVEL STAGE

The high-level stage is made up of a push-pull.
The transistor connected between pins 15 and 14 supplies the basic current for the TP01 control whereas the transistor located between pin 14 and the earth channels a locking reverse current due to the CP22 discharging.
In conduction phase, the RP10 resistance keeps this stage fed (pin 15) at a value less than or equal to 5V while limiting the polarisation current.

TP01 COMMUTATION AID CIRCUITS

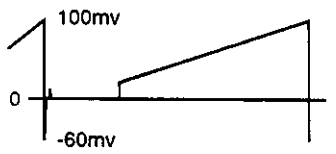
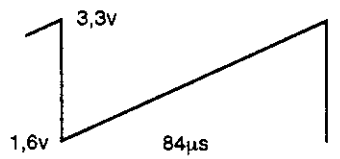
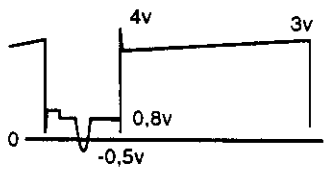
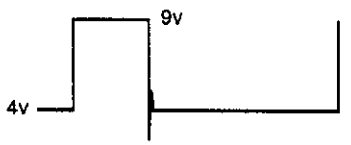
The RP14 and RP15 resistances provide a CP22 preliminary charge right from the moment of charging in order to reinforce the locking reverse current in the start-up phase and at the beginning of each burst. The LP06 self-induction coil ensures the "dI/dt" of this reverse current.
The DP08, CP17, RP17 circuit works in forward with the 11-12 winding so as to polarise the TP01 base negatively outside the control strobes. The aim is the same as for the previous circuit.
The DP05, RP03, CP09 network slows down the increase in the TP01 collector's voltage when it is locked in order to guarantee a minimum peak power and limit the overvoltage point.

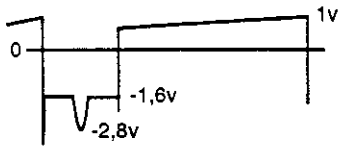
POWER SUPPLY REPAIR METHOD

CONTROL OF THE POWER SUPPLY BY LOW-TENSION METHOD

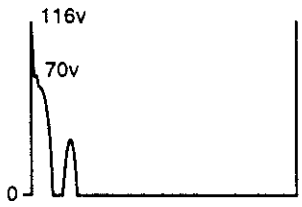
- Discharge the CP07 capacitor
- Connect the «+» of the CP07 and CP14 capacitors
- Supply the television set with a continuous voltage of 12V via the mains plug

SIGNALS AND VOLTAGES ON IP01

PIN	SIGNALS	PIN	SIGNALS
3		6	1,2V
		7	4,2V
		8	0V
10		9	3V
		11	2,5V
		16	9V
14			
15			



TP01 BASE



TP01 COLLECTOR

UB = 60V
UA = 10V
UX = 5V

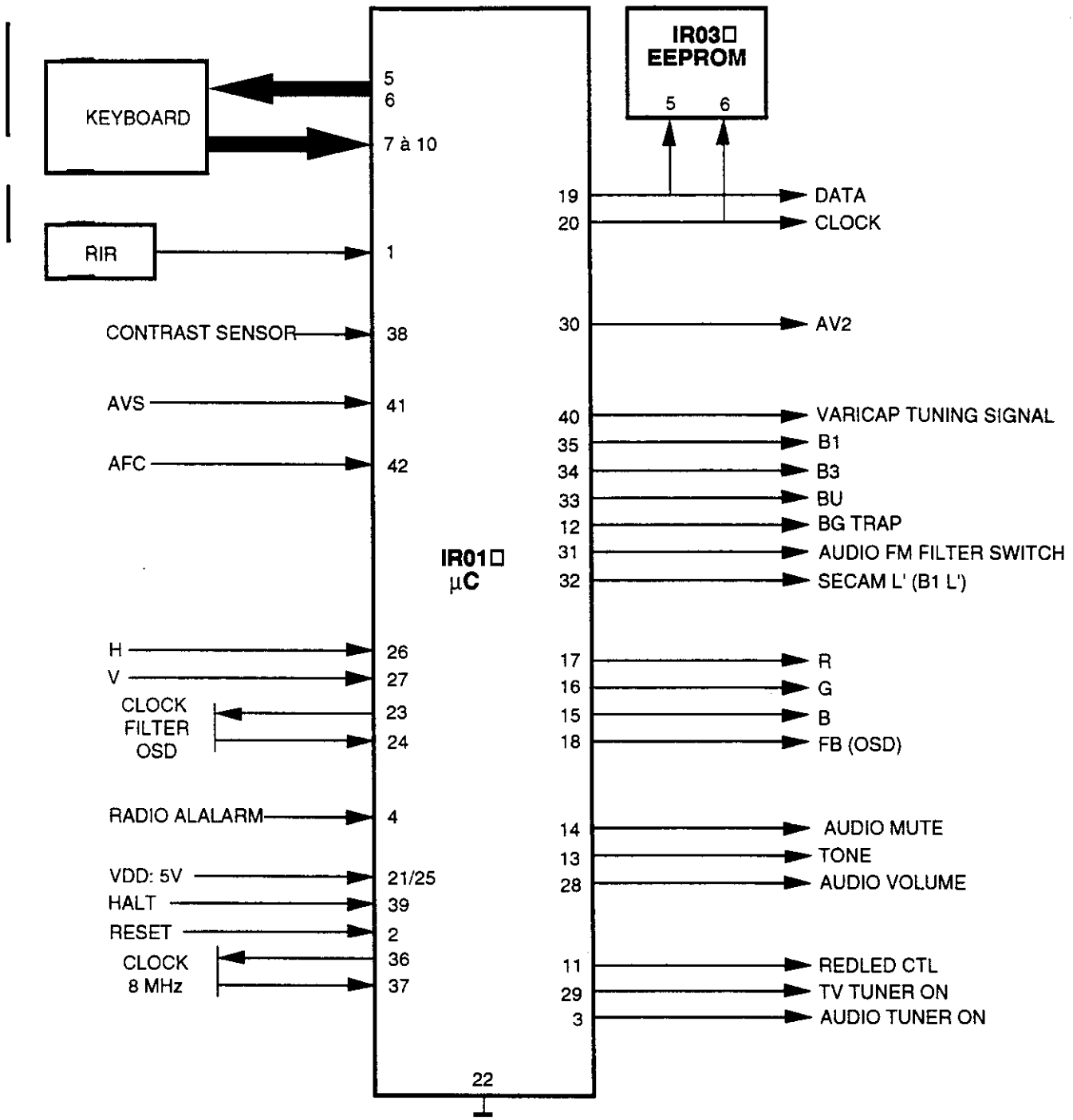
CONTROL OF THE 220V AC POWER SUPPLY WITH A LOAD RESISTANCE

- Disconnect pin 1 from LL05
- Charge UB with a resistance of 300Ω / 40W

In these conditions, UB = 115V.

CENTRE DE FORMATION TECHNIQUE

MANAGEMENT

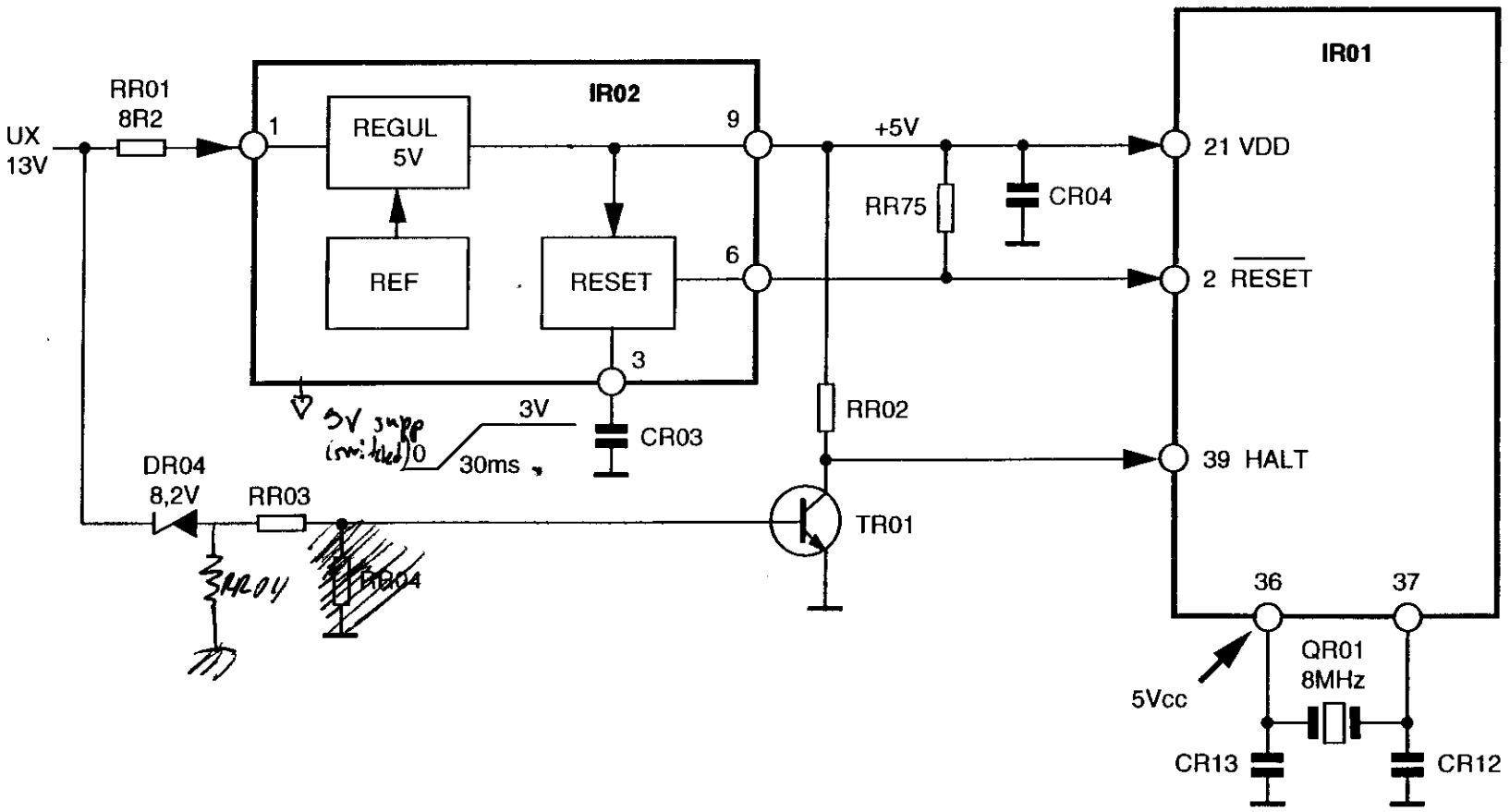

IR03□
EEPROM
5
6
KEYBOARD
5
6
7 à 10
RIR
1
CONTRAST SENSOR
38
AVS
41
AFC
42
IR01□
µC
H
26
V
27
CLOCK
FILTER
OSD
23
24
RADIO ALALARM
4
VDD: 5V
21/25
HALT
39
RESET
2
CLOCK
8 MHz
36
37
22
19
DATA
20
CLOCK
30
AV2
40
VARICAP TUNING SIGNAL
35
B1
34
B3
33
BU
12
BG TRAP
31
AUDIO FM FILTER SWITCH
32
SECAM L' (B1 L')
17
R
16
G
15
B
18
FB (OSD)
14
AUDIO MUTE
13
TONE
28
AUDIO VOLUME
11
REDLED CTL
29
TV TUNER ON
3
AUDIO TUNER ON

GENERAL

This frame structure is managed by a ST929J6B1 microcontroller and an EEPROM memory containing the TV channel parameters, the user controls values, the mechanism for saving information in the event of a mains power cut as well as the service mode.

It performs the following functions:

-management of the remote control unit and front-panel keyboard,
-control of the tuner (bands, voltage standards and synthesis),
-control of the brightness, contrast, colour and volume by an IIC bus,
-standby / switching-on of the television set and radio,
-generation of the characters for incrusting menus on the screen,
-recognition of the wiring of one two SCART plugs by a low and high level when the appliance is switched on (low AV1).



THOMSON MULTI MEDIA

IR01 POWER SUPPLY AND FUNCTIONAL SIGNALS

POWER SUPPLY

The microcontroller, IR01, is fed from the 13V UX coming from the power supply. One part of the double regulator, IR02, receives this 13V UX (pin 1) and enables the IR01 to be fed in 5V (pin 21).

CLOCK

The QR01, 8 MHz, crystal guarantees the stability of the system clock (pins 36 and 37).

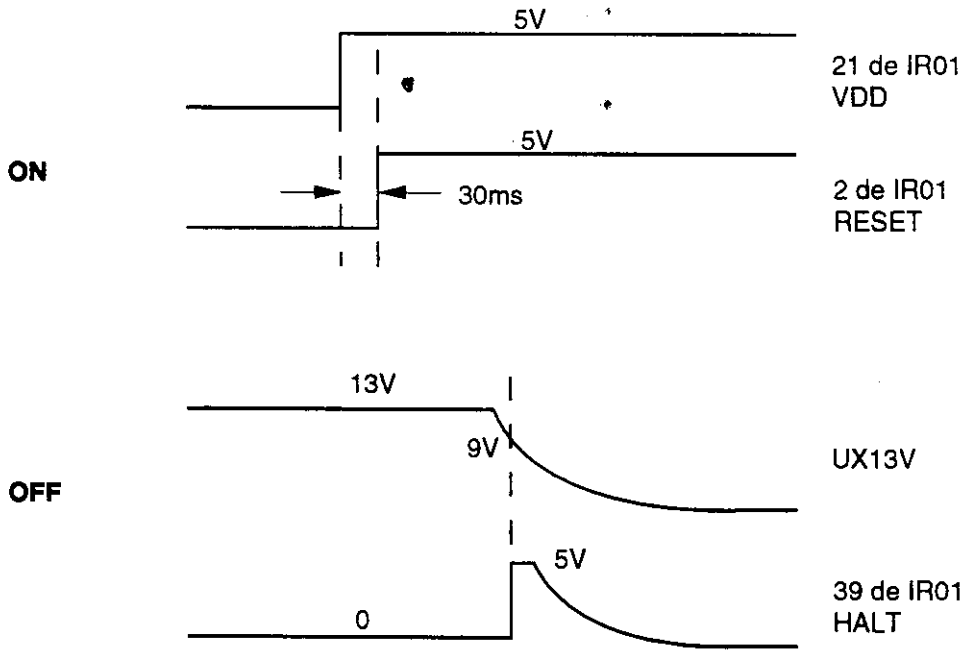
RESET

When the IR02 voltage in 9 has reached 5V, pin 6 of IR02 goes up to the high level after a delay of a few milliseconds given by the CR03 charge (pin 3 of IR02). Pin 2 of IR01 receives the information to RESET.

MAINS POWER CUT DETECTOR

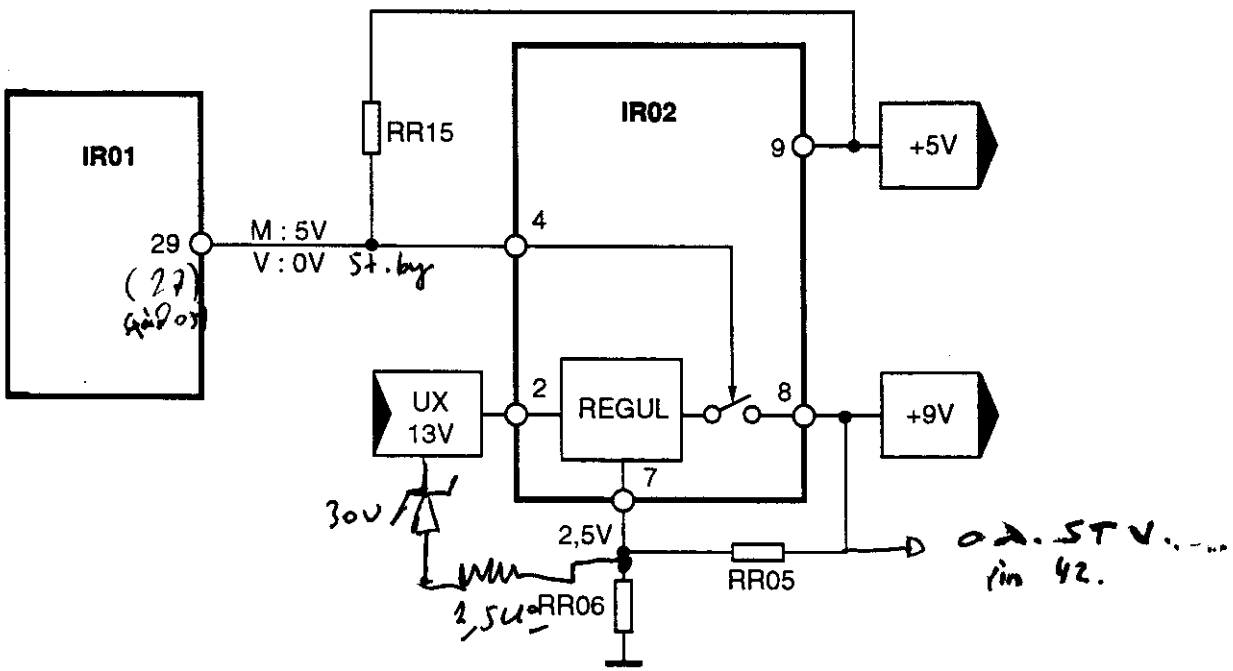
In steady state and standby, pin 39 of IR01, informed by the 13V UX, DR04 and TR01 is at 0V. Should the 13V UX disappear (<9V), TR01 gets locked and brings IR01 to a **HALT**. A programme number and adjustment values saving procedure in EEPROM is triggered.

Α. Το ΤR01 είναι βραχυκυκλ/νο, δεν έχουμε service mode.



TV SET STANDBY AND SWITCHING-ON CONTROL

Pin 29 of IR01 corresponds to an open drain outlet.
When it is switched on, its move up to high state leads to the 9V regulator in IR02 being validated.
The +9V voltage available at outlet 8 of IR02 feeds IV01 (pin 42), and leads to the output of the line power control signals.
The 13V and 24V voltages recovered from the line transformer will enable the television set to be fed completely.



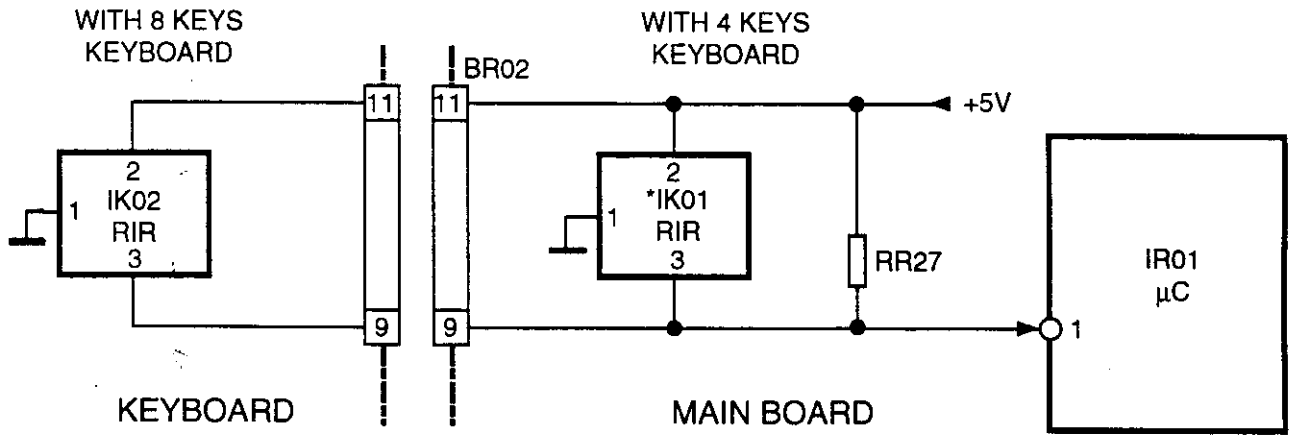
THE EXTERNAL CONTROLS

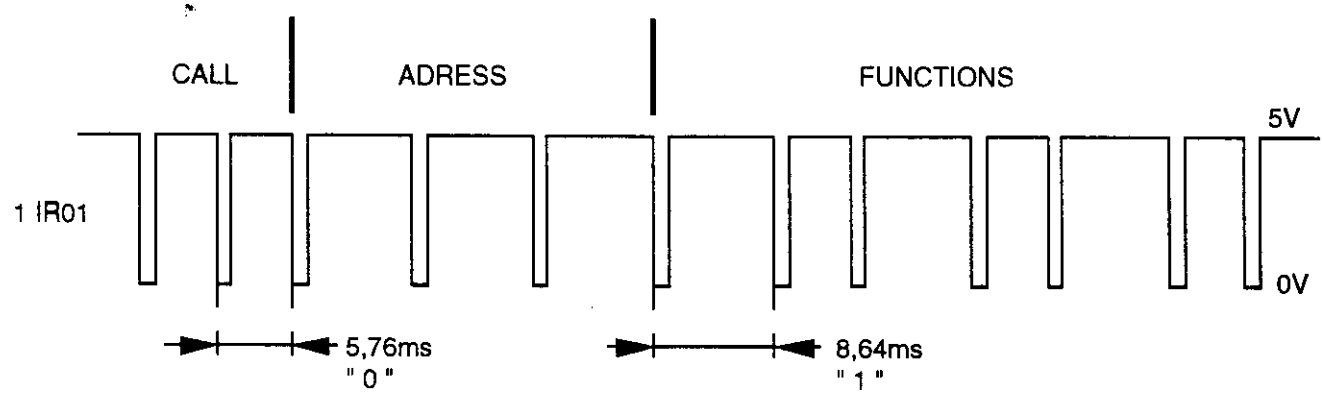
THE REMOTE CONTROL UNIT

The remote control unit function codes (11 bits) arrive at 1 of IR01. They comprise:

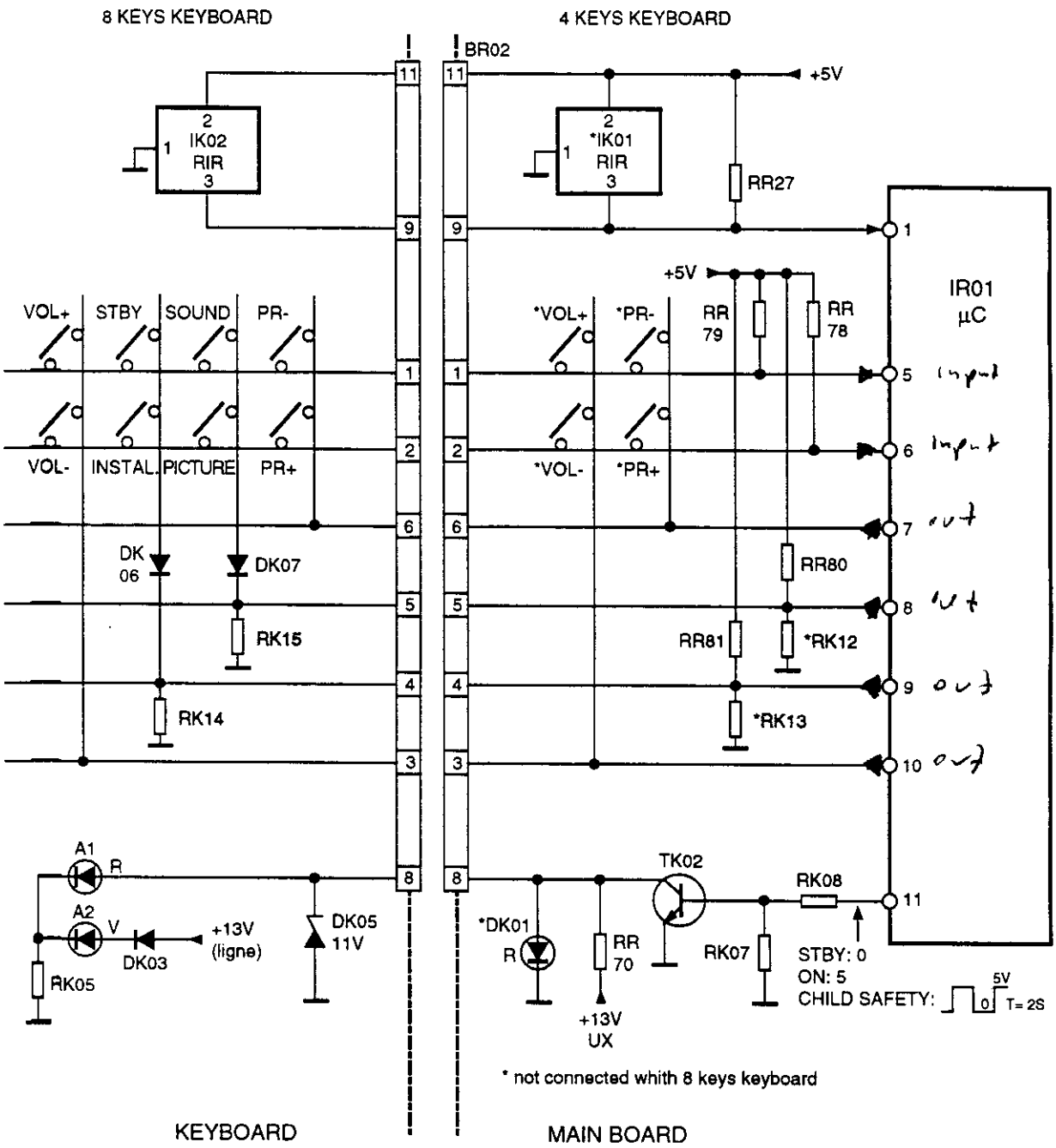
- 2 T1, T0 (00 à 11) call bits
- 3 A2 , A1 , A0 (111 = TV) address bits
- 6 F5 , F4 , F3 , F2 , F1 , F0 function bits which are defined by the key selected.

These codes are repeated every 138 ms.





Αν η εκπομπή του χειριστηρίου του I.R01 έχει αλλάξει, ο μPC δεν αναγνωρίζει τις εντολές του τηλεκοντρόλ.

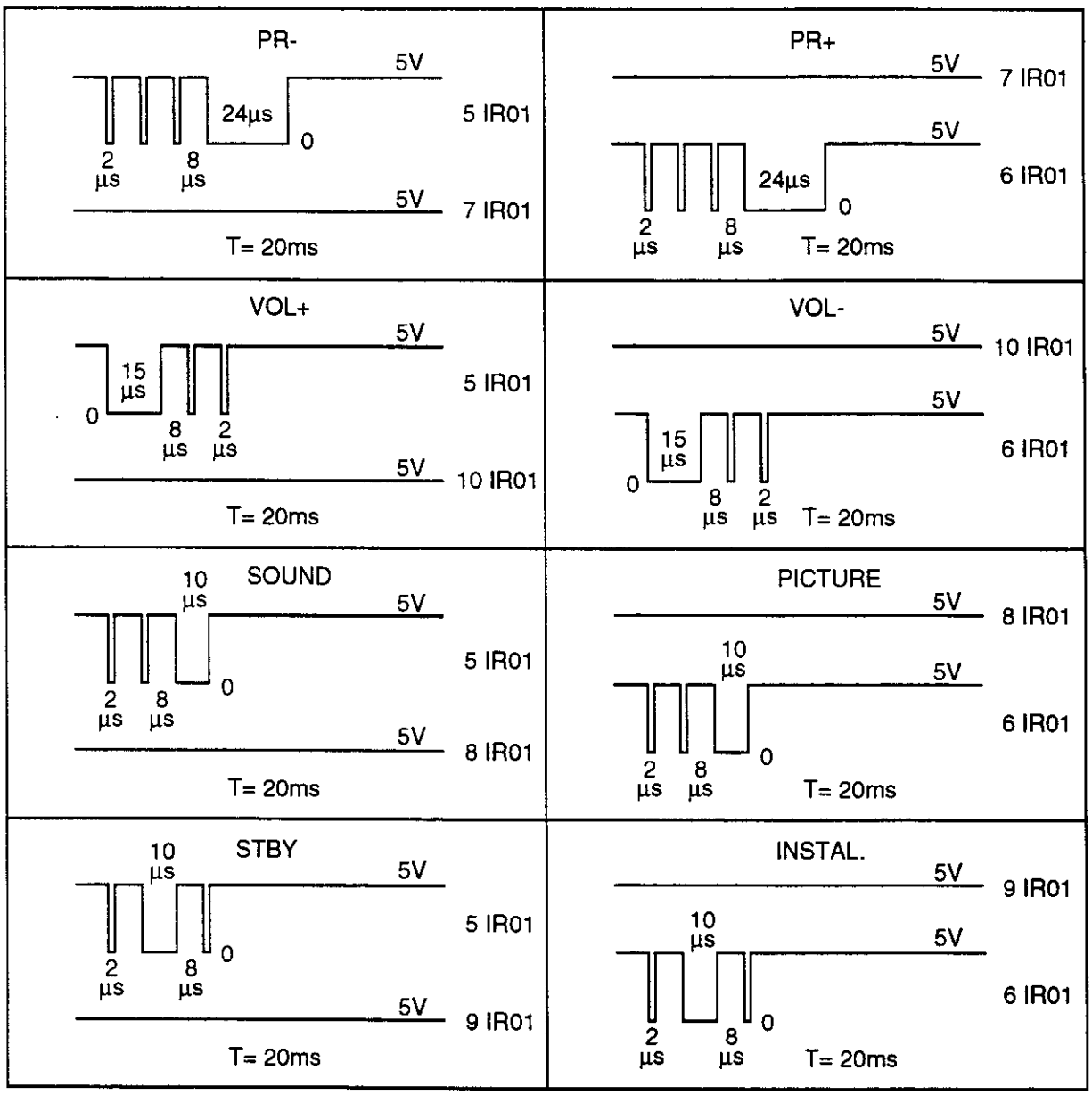


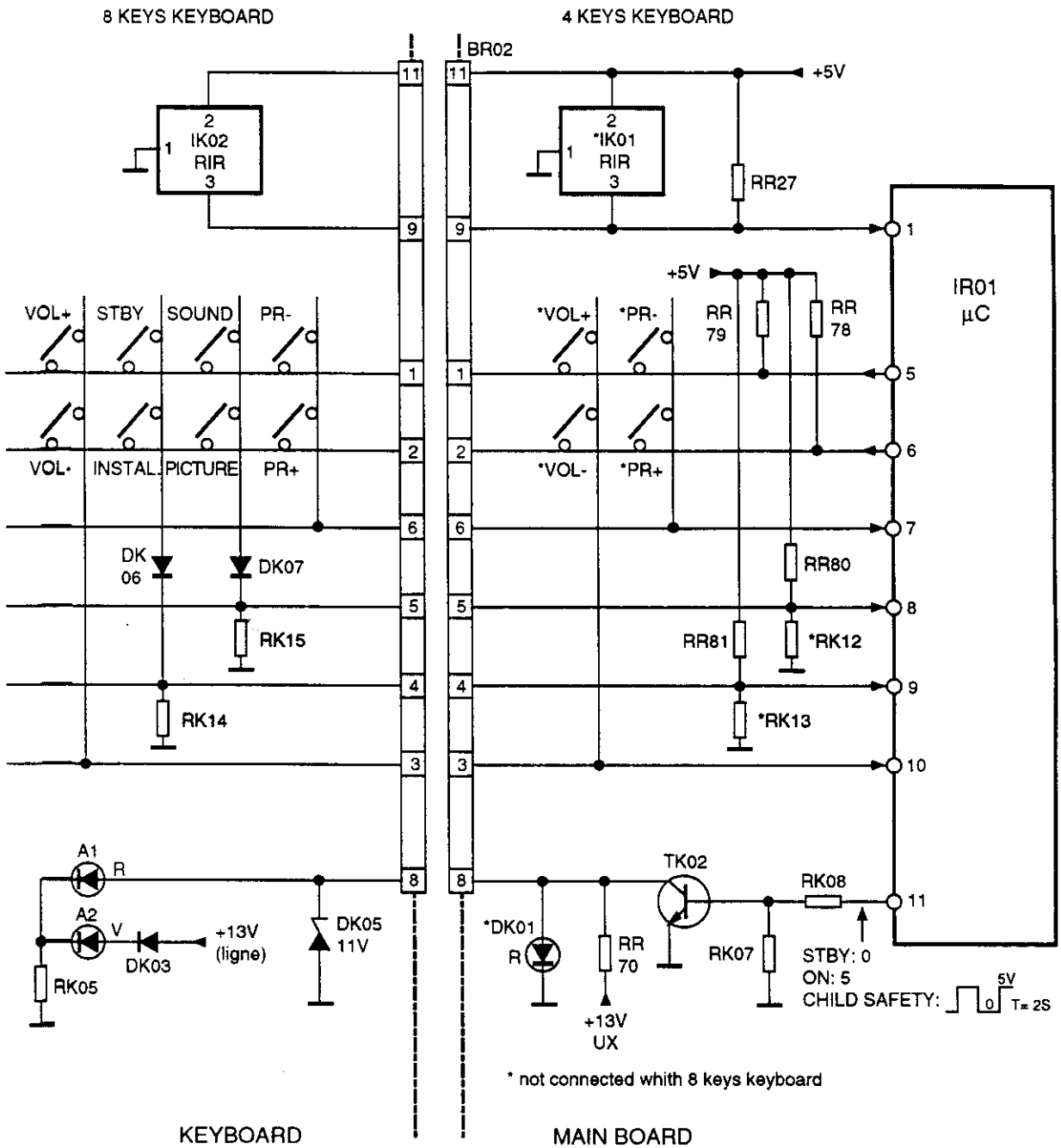
CENTRE DE FORMATION TECHNIQUE

THE KEYBOARD

The keyboard is laid out in a line/column matrix. Pins 5 and 6 are scanning outputs. Pins 7 to 10 are function inputs.
Should no key on the keyboard be pressed, the scanning outputs are permanently in high status, whereas the functions inputs are at low level.
When a key is pressed, a low level appears at the scanning output concerned. Then this output alone gives out a keyboard scanning signal.

KEYBOARD SCANNING SIGNALS





CENTRE DE FORMATION TECHNIQUE

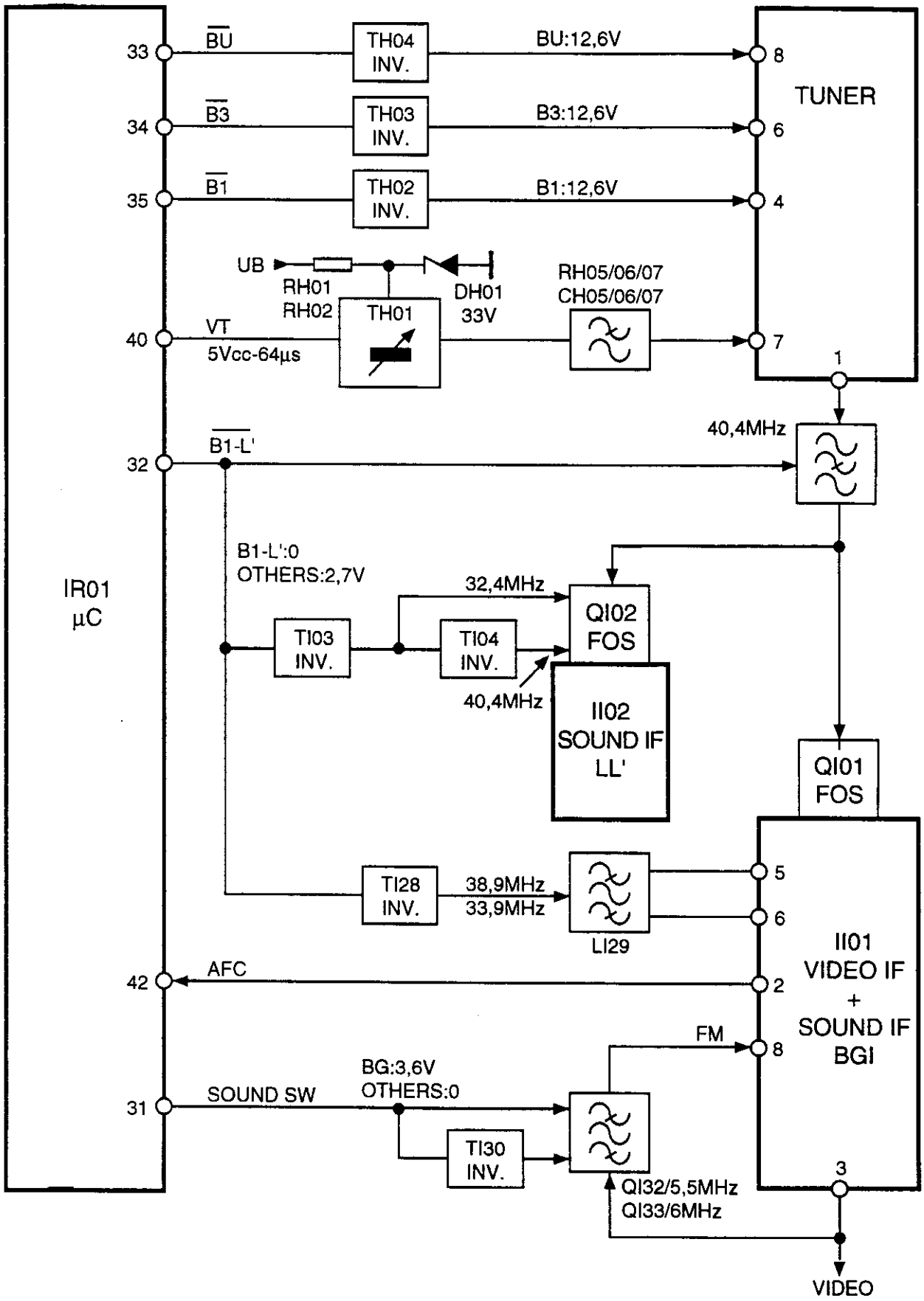
BRAND RECOGNITION

Pins 8 and 9 enable the brand of television set to be recognised. When IR01 is initialised, the levels on these pins are analysed. The brands are differentiated by the RK12/13 or RK14/15 optional resistances.

8 IR01	9 IR01	BRANDS
1	0	TELEFUNKEN
0	1	BRANDT/SABA
1	1	THOMSON

LEDS CONTROLS

With a television set equipped with a 4-key keyboard, a red LED comes on in STANDBY and ON modes from +13V UX on.
With a television set equipped with an 8-key keyboard, a red LED comes on in STANDBY mode from +13V UX on, and a green LED comes on in ON mode from +13V line on.
In child-lock mode, the red LED flashes (T= 2 seconds).
In alarm-clock mode, the red LED flashes (T= 0. 5 seconds).



CENTRE DE FORMATION TECHNIQUE

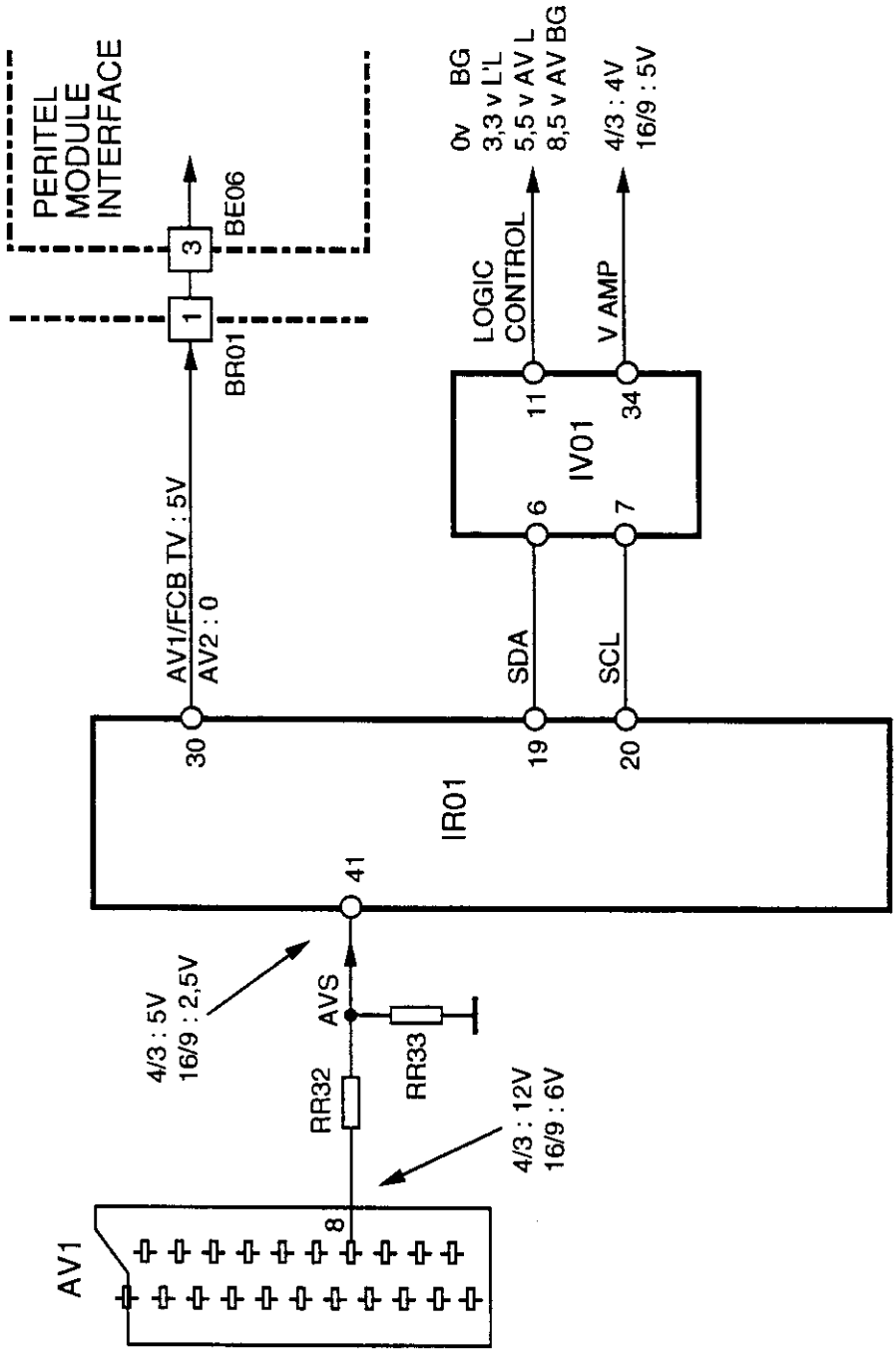
CHANNEL AND STANDARDS MANAGEMENT

Pins 33, 34 and 35 of IR01 manage the tuner reception bands. The Varicap voltage is worked out from the signal available in 40 of IR01 (VT), from the TH01 variable resistance and from the RH05 to RH07/CH05 to CH07 low-pass filter. Automatic frequency control is performed by the picture I.F. II01 (pin 2) and IR01 (pin 42) integrated circuit.

Output 32 of IR01 makes it possible to:

- -take the 40.4 MHz rejector in 1L' band out of operation,
- -set the sound I.F. to 40.4 MHz (1L' band) or 32.4 MHz (other cases),
- -set the image I.F. to 33.9 MHz (1L' band) or 38.9 MHz (other cases).

Output 31 of IR01 selects the QI32 (5.5 MHz) or QI33 (6 MHz) filters for the FM intercarriers.



CENTRE DE FORMATION TECHNIQUE

AV COMMUTATIONS

Pin 41 of IR01 receives the AV1 low-speed switching. IR01 differentiates between a 4/3 video signal and a 16/9 video signal by the value of the continuous voltage on its pin 41.

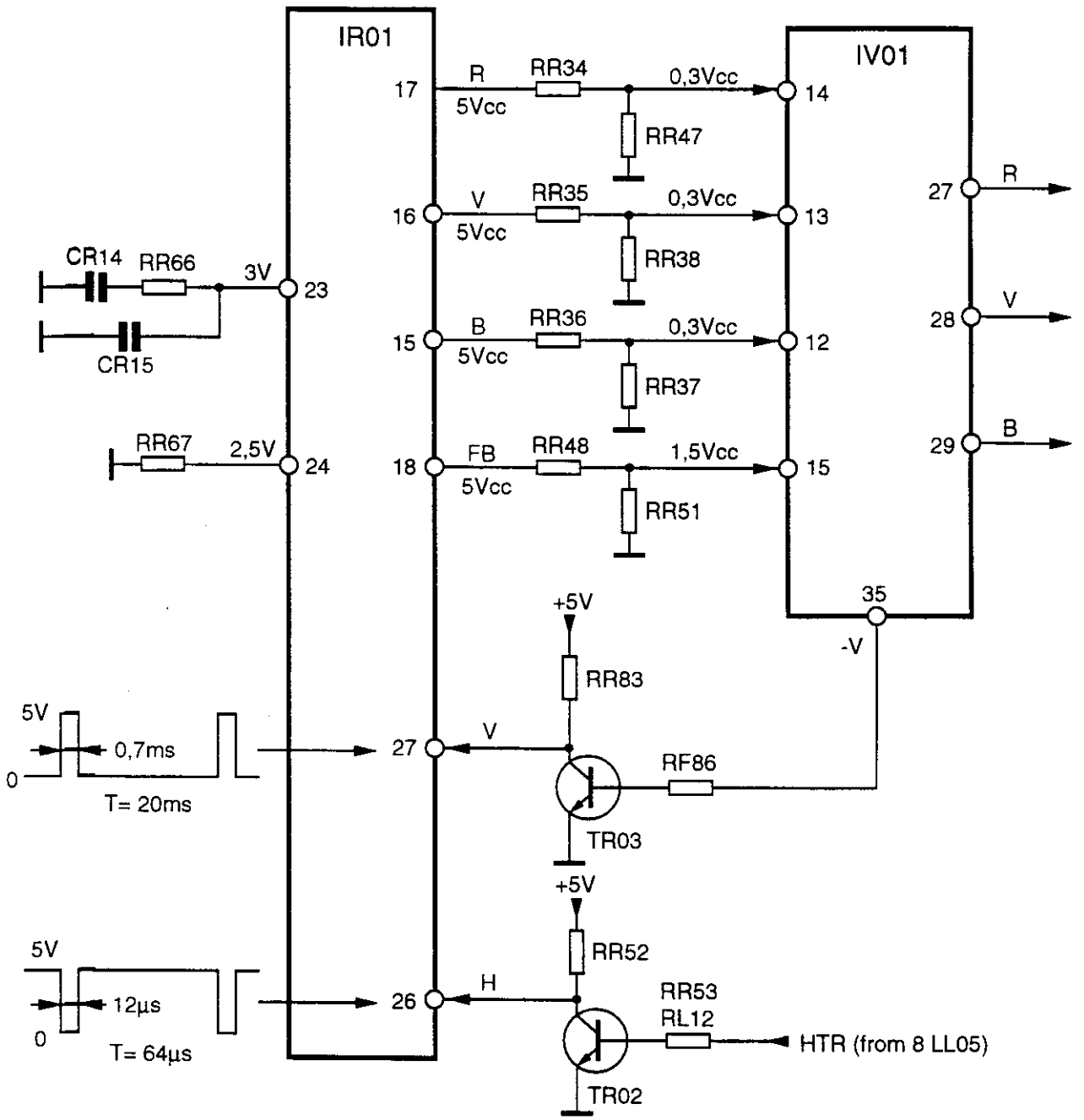
5V = 4/3
2.5V = 16/9

The INTERNAL/EXTERNAL video and audio commutations are performed by the LOGIC CONTROL information coming from output 11 of IV01 and going to 4 of II01 (video) and to 10 of II02 (audio). This piece of information, generated by IR01, is transmitted to IV01 via the IIC bus.

The AV2 output (pin 30 of IR01) enables the video or luminance/chrominance and audio signals coming from the SCART 2 socket to be taken into account.

The video/luminance-chrominance commutation is performed in IV01 under the control of IR01.

The 4/3 to 16/9 format change is performed in IV01 under the control of IR01.



CENTRE DE FORMATION TECHNIQUE

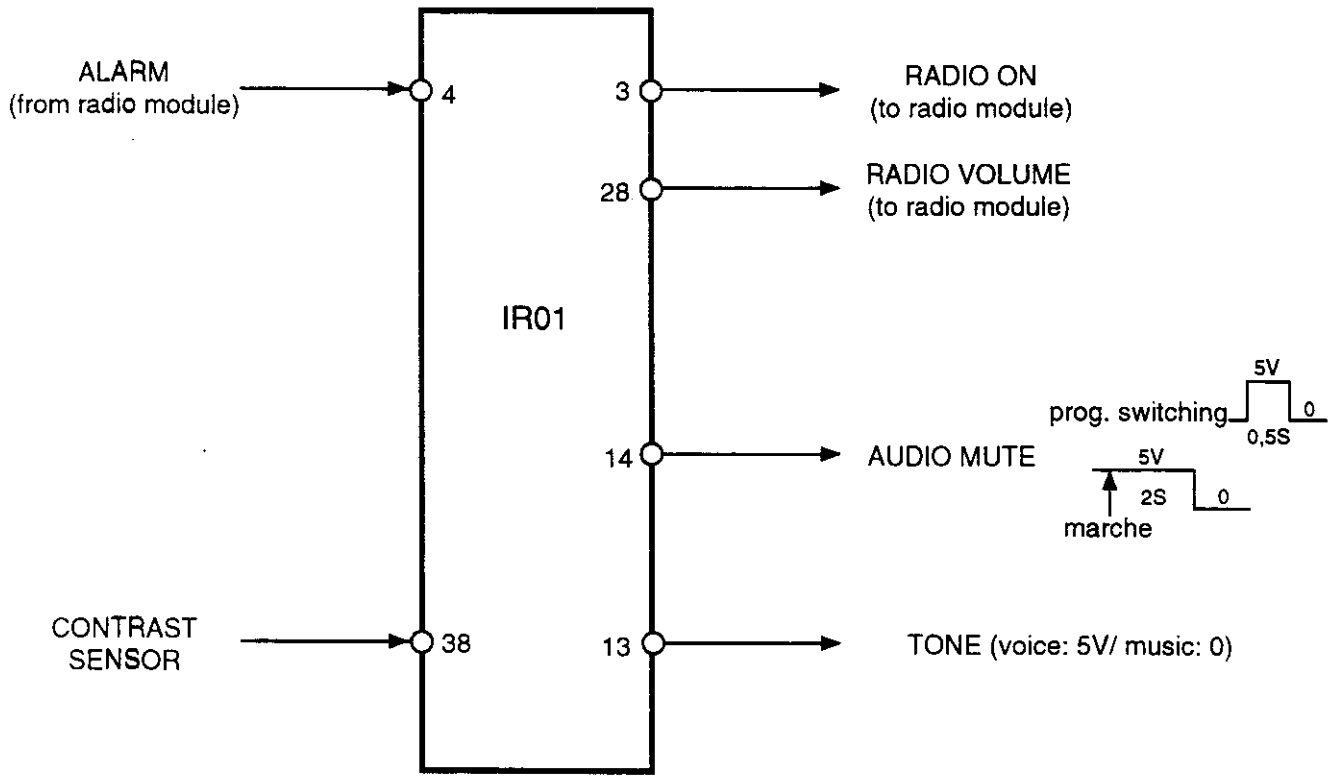
OSD SIGNAL GENERATOR

The IR01 microcomputer supplies the signals necessary for screen display.
Via its pin 18, it delivers the FB incrustation command.
Via its pins 15, 16 and 17, it delivers the RVB signals. These three signals will come and incrust themselves in the TV RVBs via IV01.

The line H return impulses (5Vcc) arrive on pin 26 of IR01. They come from LL05 (pin 8) via the TR02 transistor.
The V raster return impulses (5Vcc) arrive on pin 27 of IR01. They come from IV01 (pin 35) via the TR03 transistor.
These two H and V signals, present both with and without aerial signal, are necessary in order to synchronise the position of the O.S.D. window in relation to television set scannings.

The OSD clock is obtained from a PLL inside IR01 pins 23 and 24). This clock controls a meter inside IR01 which sets the width of the OSD window.

N.B.
Should the H line return impulses be absent, there is no OSD. ωστε μηδενισμός ο μPC..
Should the V raster impulses be absent, the menus turn vertically.



CENTRE DE FORMATION TECHNIQUE

OTHER CONTROLS

PIN 3
This enables the radio to be switched on.

PIN 4
This enables the television or radio alarm to be triggered.

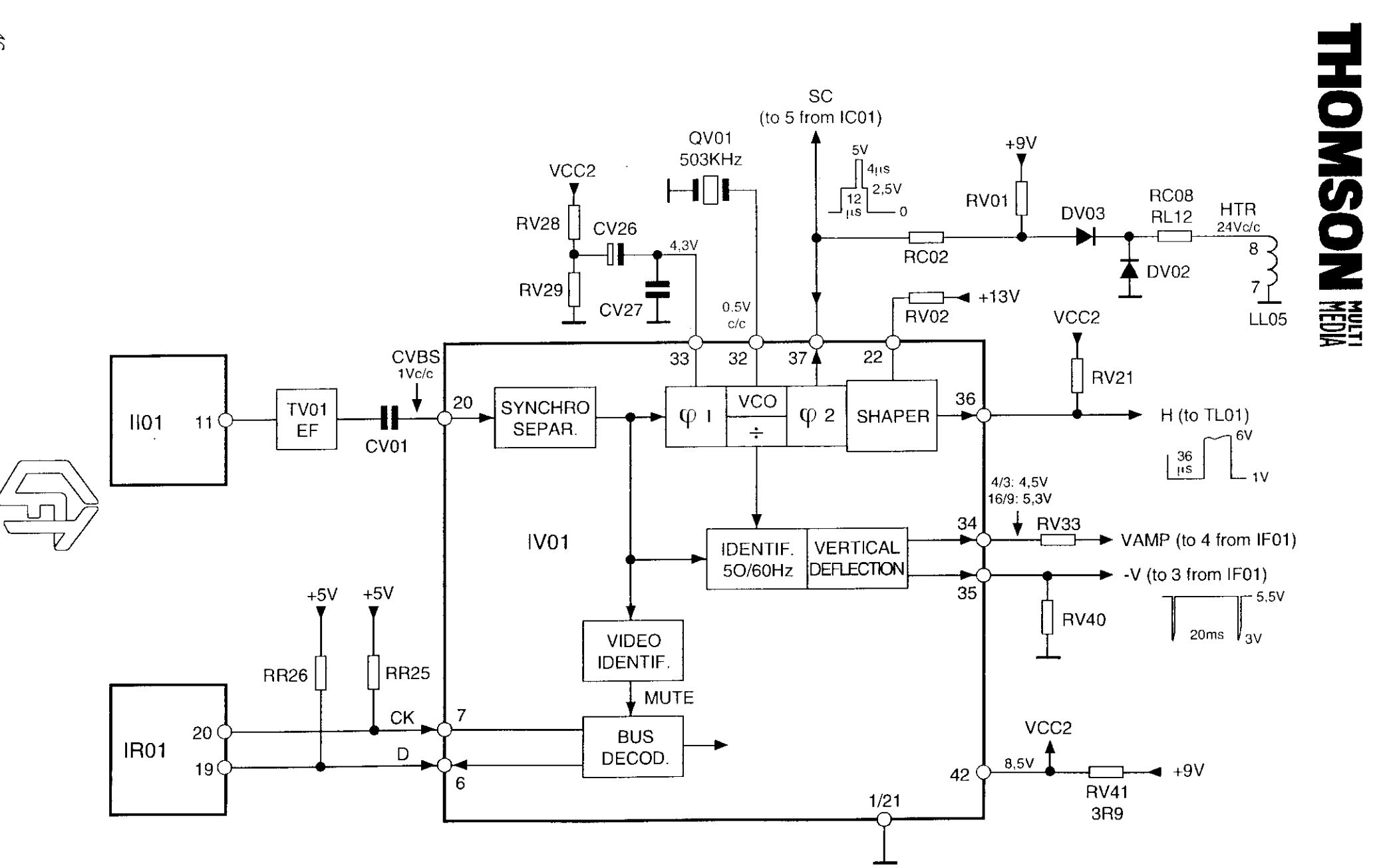
PIN 13
This enables the tone correction filter to be modified (voice: 5V / music: 0).

PIN 14
This triggers the audio mute mechanism during OFF-ON and STANDBY-ON transitions, programme changes and channel searches. This output is active at 5V.

PIN 28
The PWM signal on this output sets the volume of the radio.

PIN 38
This enables the picture contrast to be adjusted depending on the ambient light.

TIME BASES


SC
(to 5 from IC01)
QV01
503KHz
VCC2
RV28
CV26
4,3V
RV29
CV27
0.5V
c/c
5V
4µs
2,5V
12
µs
0
+9V
RV01
DV03
RC08
RL12
HTR
24Vc/c
RC02
DV02
8
7
LL05
RV02
+13V
VCC2
RV21
CVBS
1Vc/c
II01
11
TV01
EF
CV01
20
SYNCHRO
SEPAR.
33
32
37
22
φ 1
VCO
÷
φ 2
SHAPER
36
H (to TL01)
6V
36
µs
1V
IV01
4/3: 4,5V
16/9: 5,3V
34
RV33
VAMP (to 4 from IF01)
IDENTIF.
50/60Hz
VERTICAL
DEFLECTION
35
-V (to 3 from IF01)
RV40
5,5V
20ms
3V
+5V
+5V
RR26
RR25
VIDEO
IDENTIF.
MUTE
IR01
20
19
CK
D
7
6
BUS
DECOD.
VCC2
42
8,5V
+9V
RV41
3R9
1/21

ELABORATION OF THE LINE AND RASTER SIGNALS BY IV01

LINE GENERATION

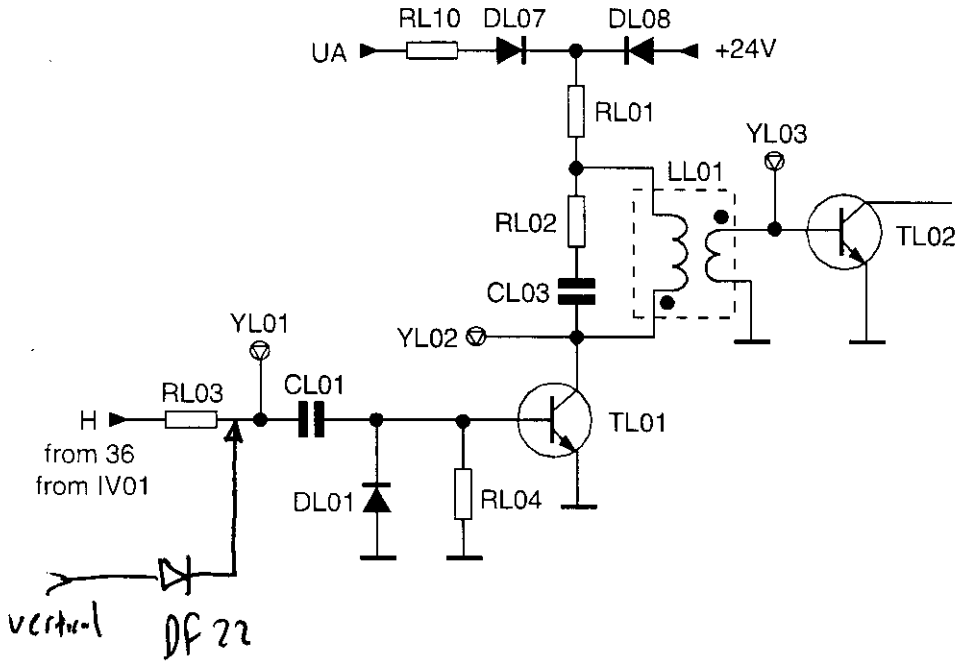
From the CVBS composite video present at input 20 of the circuit, the line synchro is taken to be applied as a reference to a first phase comparator providing a filtered error voltage to pin 33 via the RV28/29 and CV26/27 elements. The error voltage controls a VCO whose 503 kHz central frequency is determined by the QV01 crystal at pin 32. A divide-by-32 counter sends back 15625 Hz, in comparison with the line synchro (PLL loop). The VCO can work according to two modes: either in locked mode via the synchro when a programme is present, or in FREE RUN mode when the television set is only used in OSD. The line time base control signals come from the divide-by-32 counter through a phase shift stage and a formatting stage. These signals marked H are available on pin 36. Phase correction is carried out by the action of a second phase comparator receiving a submultiple of the VCO frequency as well as the line return information via pin 37 of the circuit.
The H output (pin 36) is at the high level as long as the mains voltage (pin 42) is less than 6.8V. The +13V power supply arriving at 22 of IV01 enables the line power transistor conduction time to be extended from 14µs to 36µs.

RASTER GENERATION

A separating stage takes the vertical synchro from the CVBS signal entering pin 20 via the SYNCHRO SEPARATOR. This new signal cyclically validates the raster time base, controlled from a synchronous lines counter on the VCO. -V raster impulses (pin 35) are available at the exit from the raster time base. In the FREE RUN mode, the time base sweep is controlled by the free frequency of the VCO.
The vertical synchro is also used for 50/60 Hz automatic recognition.

MUTE GENERATION

The video identification stage analyses the presence of line synchro and delivers the mute information. This is transmitted to IR01 via the IIC bus. Should there be no line synchro, the television set will go into STANDBY mode after 5 minutes.



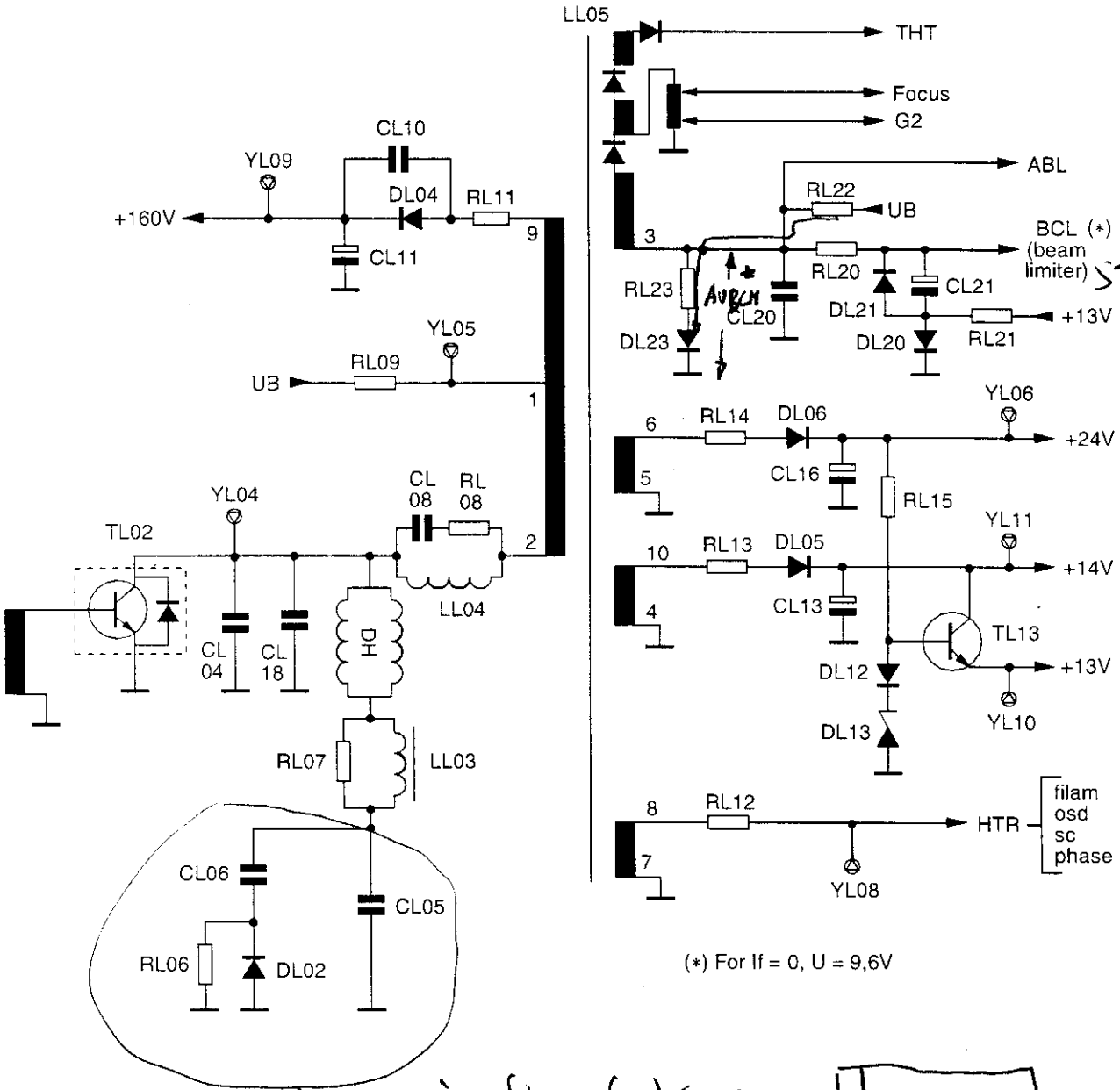
(Αν υπάρξει πρόβλημα στο vertical, ελαττώνεται τάση μέσω της DF 22 που πάει στο Driver.)

LINE TIME BASE CONTROL

The H signal coming from output 36 of IV01 is formatted by RL03/04, CL01 and DL01. The driver stage comprises the TL01 transistor. the RL02/CL03 cell limits the overvoltage surge appearing on the TL01 collector when it blocks.
The LL01 driver transformer, working in alternated mode, saturates the TL02 line power transistor each time the driver stage is blocked.

This part is fed:

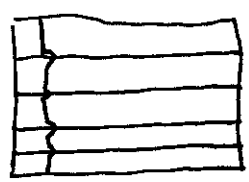
- at start-up by the UA (22V) audio mains voltage via the DL07 diode,
- in steady state by the +24V voltage coming from the THT via the DL08 diode.



(*) For If = 0, U = 9,6V

Au départ à du boutfuf:

★ AVBCM. Average beam current mirror.



LINE POWER STAGE

The THT transformer primary (LL05) is connected between UB and the TL02 line power transistor via the LL04/RL08/CL08 tuned circuit.

The CL04/18 capacitors determine the line return time with the line deflector (T=12µs).

The "S" CL05 capacitor, whose average voltage is equal to UB, supplies power to the horizontal deflector in series with the LL03 linearity self-induction coil and its RL07 reducing resistance.

At the same time on CL05, the CL06/DL02/RL06 circuit makes it possible to deaden the spurious oscillations appearing with each sudden increase in beam current.

We find the following voltages and signals on the LL05 secondaries:

-pin 9, a 75V d.c. line return impulse in positive momentum superimposed on a 100V continuous voltage. A 160V voltage necessary for feeding RVB stages is obtained via RL11 and the DL04 diode.

-pin 10, a 120V d.c. impulse in negative momentum. A 14V voltage is obtained for the TELETEXT panel via RL13 and the DL05 diode.

-pin 6, a 200V d.c. impulse in negative momentum. A voltage of 24V is obtained via RL14 and the DL06 diode. It feeds the IF01 raster sweep circuit as well as the 22V audio (UA) steady state relay for feeding the driver stage.

-pin 8, a 24V d.c. line return impulse in positive momentum (HTR) for service signals (phase and sandcastle), for heating the filament and for the OSD display line synchronisation.

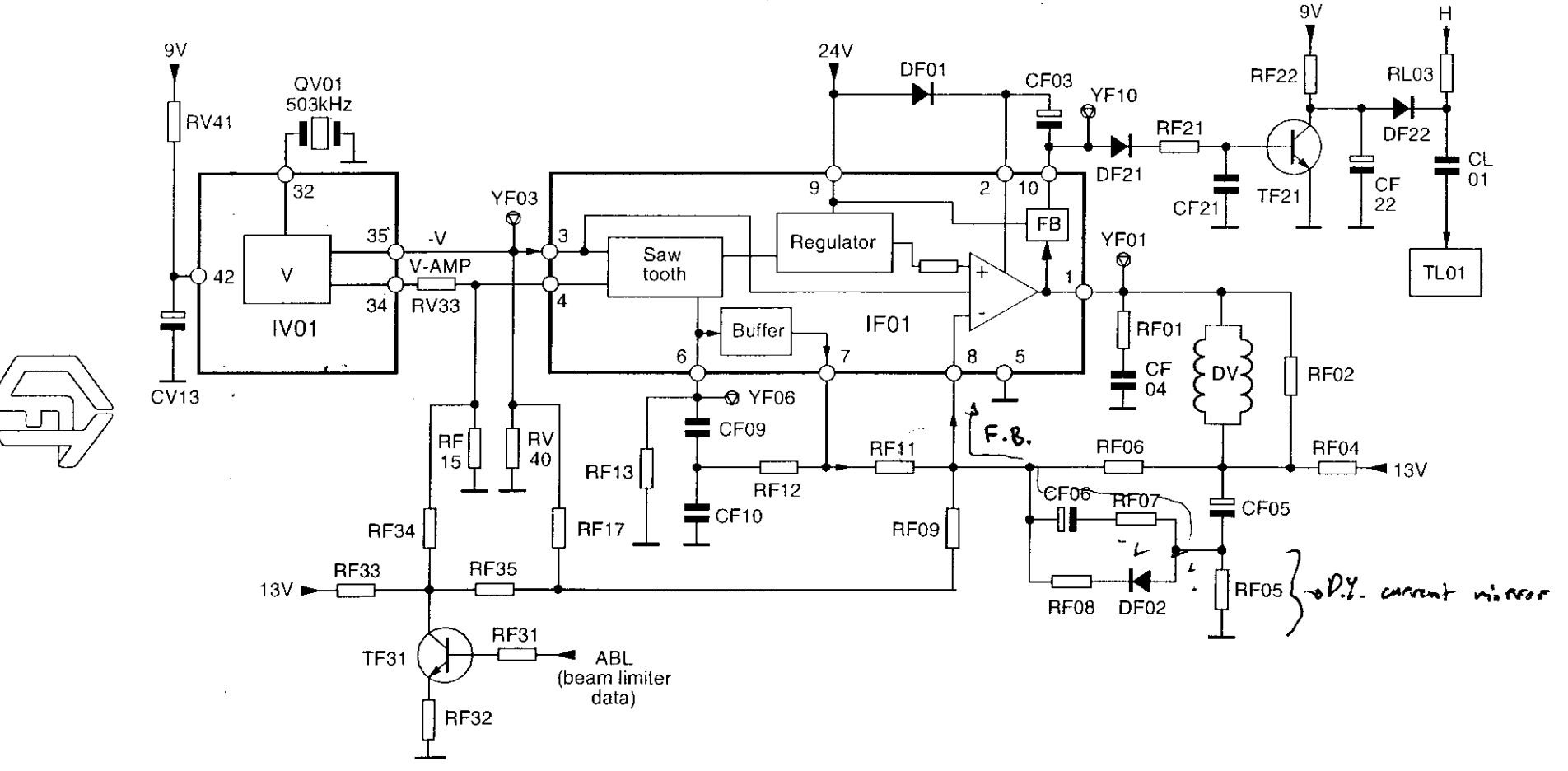
- Once integrated (RL20/CL21), the ABL information (beam current image) drawn at the base of the split diode supplies the BCL medium beam current information (it acts on the IV01 contrast and brightness controls). When there is a sudden beam current increase, the DL20 diode locks and causes the CL21 capacitor to be taken out of operation. Because of this, the reaction on the contrast and light will be quicker.

A 13V voltage is obtained from the 14V, 24V, DL13 and TL13. This feeds IV01 and the H.F./I.F. stages.

A/M

★ Για τις 32" οθόνες η RL 14 πρέπει να είναι 2,2Ω και η RL 12 » » » » 1Ω

Αν δεν είναι, τις αλλάζουμε στις νεότερες τιμές.


9V
RV41
CV13
QV01
503kHz
IV01
V
42
32
35
34
-V
V-AMP
RV33
YF03
3
4
Saw
tooth
Regulator
24V
DF01
CF03
YF10
9
2
10
FB
1
IF01
Buffer
6
7
8
5
YF01
RF01
CF
04
DV
RF02
RF22
9V
RL03
H
DF22
CL
01
TL01
RF21
DF21
CF21
TF21
CF
22
YF06
CF09
RF
15
RV
40
RF13
RF12
RF11
F.B.
RF06
RF04
13V
CF10
RF17
RF09
CF06
RF07
CF05
RF34
RF33
13V
RF35
RF08
DF02
RF05
D.Y. current mirror
TF31
RF31
ABL
(beam limiter
data)
RF32

RASTER TIME BASE

The processing of the raster time base is carried out over two integrated circuits:

- IV01 for developing raster information lasting 10L synchronous of the video signal,
- IF01 for the saw tooth generator and the power stage driving the raster deflector.

The impulse available at pin 35 of IV01 is derived from the 503 kHz oscillator in order to produce a stable period (close to 20 ms) when there is no reception from a transmitter. In the opposite case, the raster synchronisation mechanism fixes the period of this impulse in negative momentum for a duration of 640 µs.
The previous signal is then applied to the IFO1 circuit input (pin 3).

The continuous voltage present at output 34 of IV01 and injected to 4 of IF01 fixes the frame amplitude in 4/3 and 16/9.

This circuit is fed by the 24V voltage coming from the THT. It is applied to pin 9 for the general power supply and to pin 2 for the power stage. An internal flyback stage triggered by the overvoltage appearing on pin 1 at the beginning of the raster return (inductive effect of the raster deflector) commutates pin 10 from 0V to 24V during the whole duration of the partial interlaced picture frame return. The CF10 capacitor charged with 24V during the raster scan then cumulates its charge with the potential of pin 10 to double the high-level stage power supply during this phase (raster deflector inductive effect compensation).

The first stage consists of a saw tooth generator formed by:

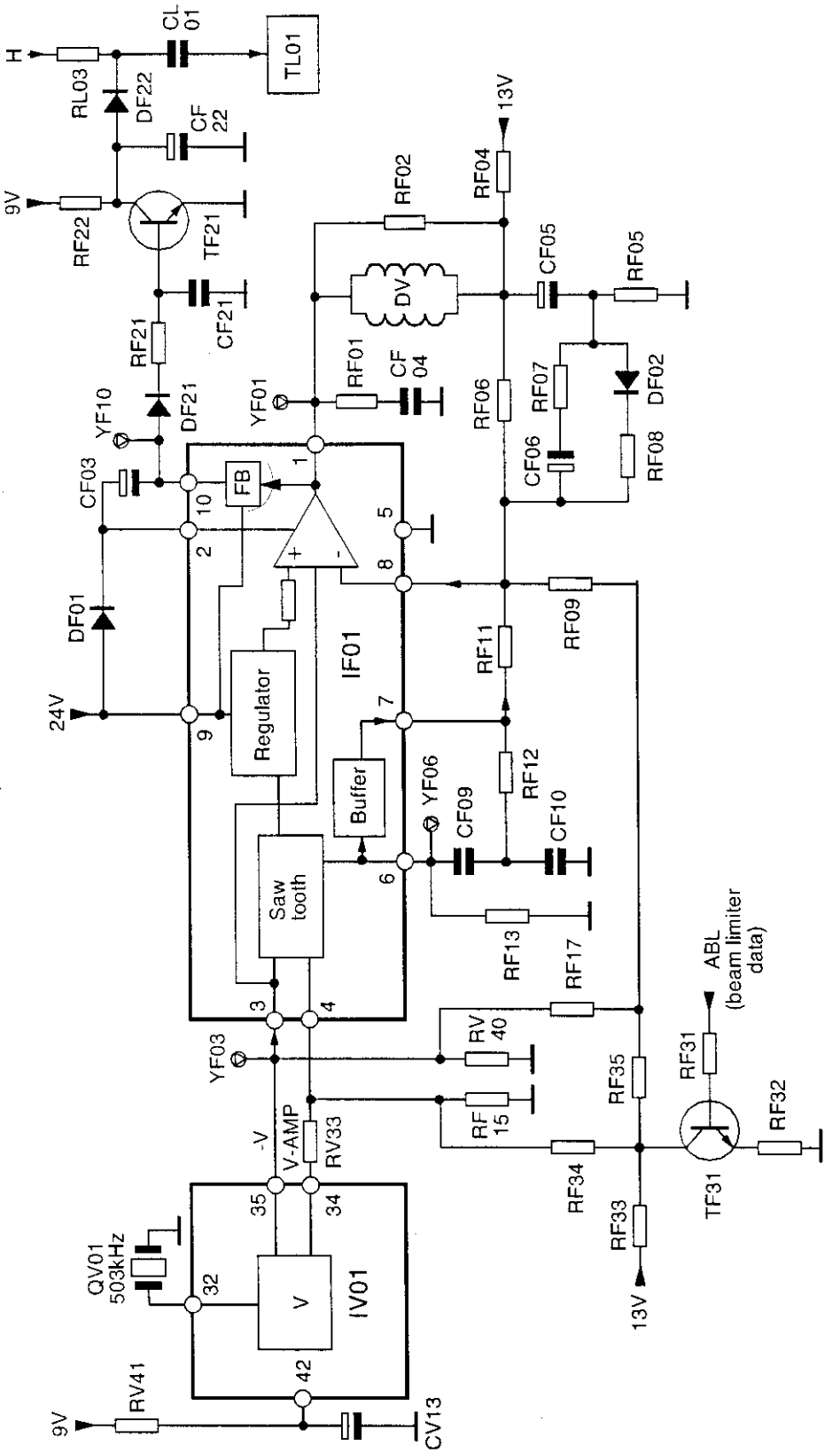
- a current generator whose value is fixed by the RF15 resistance connected to pin 4 of IF01,
- a ramp generator corresponding to the CF09 and CF10 ((pin 6) capacitor loads via the previous current (de6 saw teeth, 8V d.c. in 4/3, 5.2V d.c. in 16/9).

An impedance adapter stage then gives back this signal on pin 7 from where it is directed to:

- the reversing switch input of the power amplifier (pin 8) via RF11,
- the ramp generator capacitors through an integrating network (RF12/CF10 for vertical linearity correction.

RF-15 ... Ramp generator (CF09/10)

... το πλάτος ...



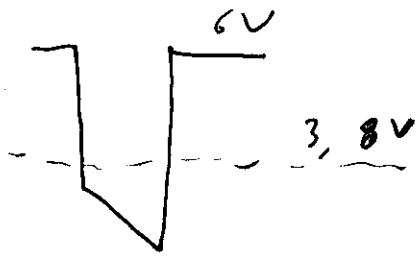
CENTRE DE FORMATION TECHNIQUE

PARTIAL INTERLACED PICTURE FRAME TIME BASE

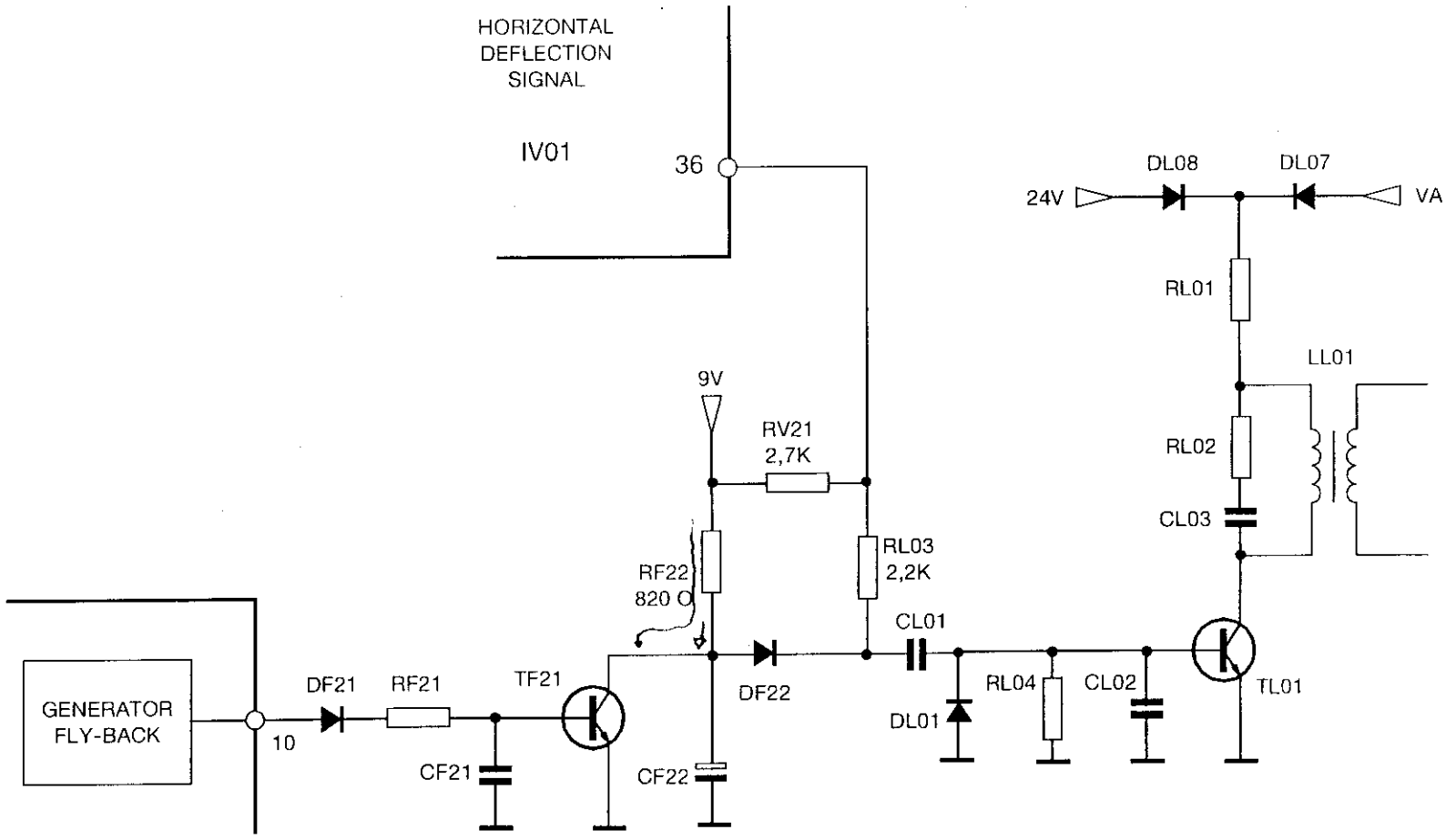
In the end, on pin 1, the power amplifier delivers the current to the vertical deflector, moreover connected to the earth, via the CF05 chemical capacitor and the RF05 measuring resistor.
The RF06 resistor determines the polarisation of the reversing switch input (pin 8), and subsequently the vertical picture shift. The RF07/RF08 /CF06/DF02 network provides the dynamic feedback of the stage.
The set's frequency range is limited by the RF01/CF04 cell.

A dynamic amplitude and picture shift correcting operation is carried out by the TF31 transistor. Indeed, polarised by the ABL medium beam current information, this transistor tends to conduct less when the tube's generating capacity increases. Consequently, via the RF34 and RF35 resistors, it intervenes on the current generator for the amplitude and on the polarisation of the amplifier for the picture shift.

Το vert. position σήματα από το average value του ρεύματος
στην έξοδο και άρα στο pin 8. (feedback). Άρα ρυθμίζουν
την τάση (από 3,8 – 6V) στο pin 8 ρυθμίζοντας το
position (μέσω του pin 35 του IV01)



Το vert. position ρυθμίζει το ρίλμια του
DC level της κινηματογράφησης.


HORIZONTAL
DEFLECTION
SIGNAL
IV01
36
DL08
DL07
24V
VA
RL01
LL01
9V
RV21
2,7K
RL02
CL03
RF22
820 O
RL03
2,2K
CL01
GENERATOR
FLY-BACK
10
DF21
RF21
TF21
DF22
RL04
CL02
TL01
DL01
CF21
CF22

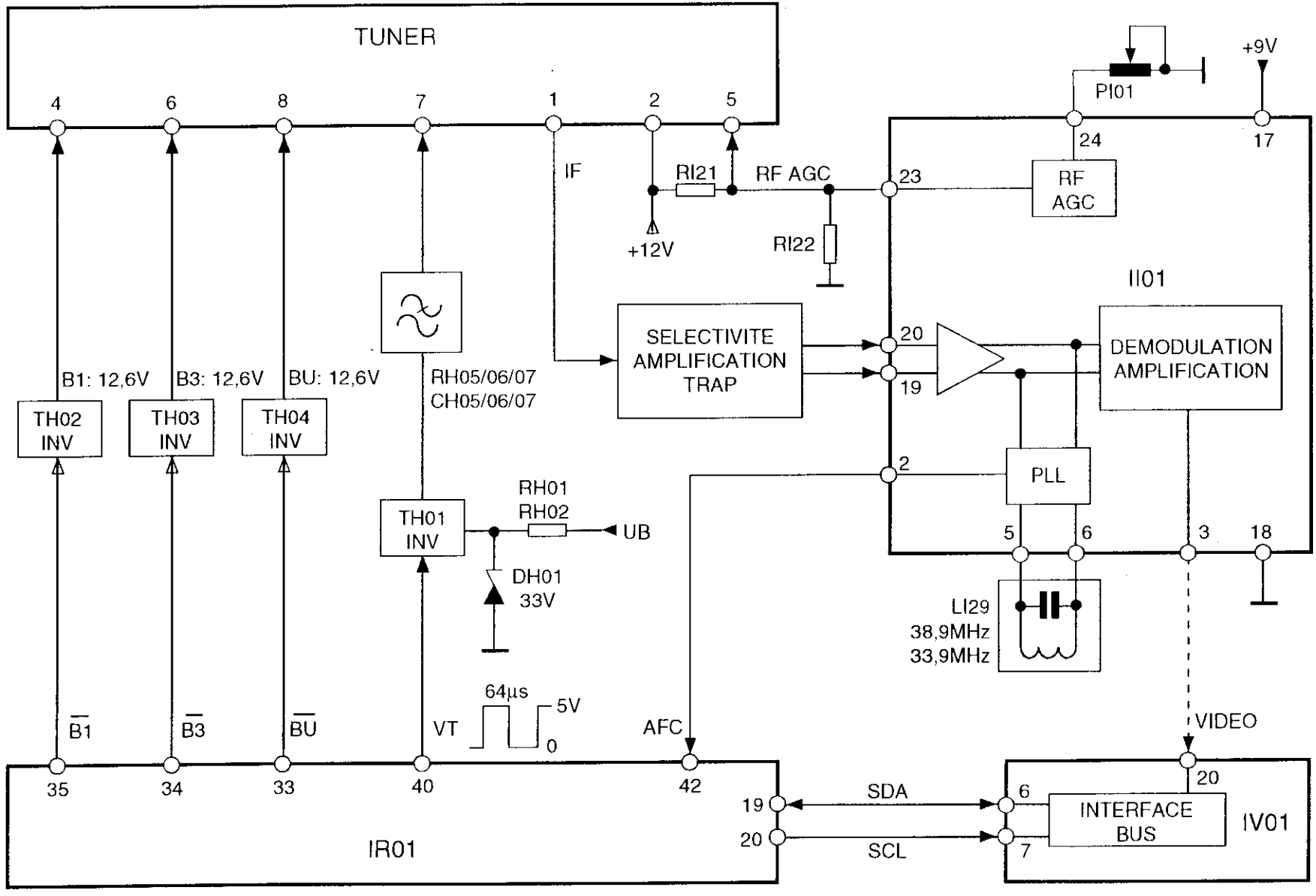
SAFETY

The flyback generator's impulses (pin 10) are rectified by DF21, filtered by CF21 and keep TF21 saturated. Should these impulses disappear (raster power defective), the TF21 locks and, via DF22, brings about a jamming of the line command (H). Because of this, the line power stage stops.
The RF22/CF22 delay time inhibits this safety mechanism at start-up

Οι βλάβες τα οποία κρίσιμα, το κύκλωμα ασφαλείας ενεργοποιείται και μπλοκάρει το ορίζοντιο στάδιο αν έχουμε παλμό στο 10.

Όταν το TF21 είναι saturated, δεν φορτίζει ο CF22.

HF FI


TUNER
4
6
8
7
1
2
5
IF
RI21
RF AGC
+12V
RI22
PI01
+9V
24
17
23
RF AGC
II01
SELECTIVITE AMPLIFICATION TRAP
20
19
DEMODULATION AMPLIFICATION
B1: 12,6V
B3: 12,6V
BU: 12,6V
RH05/06/07
CH05/06/07
TH02 INV
TH03 INV
TH04 INV
2
PLL
RH01
RH02
TH01 INV
UB
5
6
3
18
DH01
33V
LI29
38,9MHz
33,9MHz
64µs
5V
VT
0
AFC
VIDEO
B1
B3
BU
35
34
33
40
42
19
20
SDA
SCL
6
7
INTERFACE BUS
20
IV01
IR01

TUNER

The MTM-MM-4045 is a tuner equipped with a voltage synthesis mechanism. It covers the following frequency ranges:

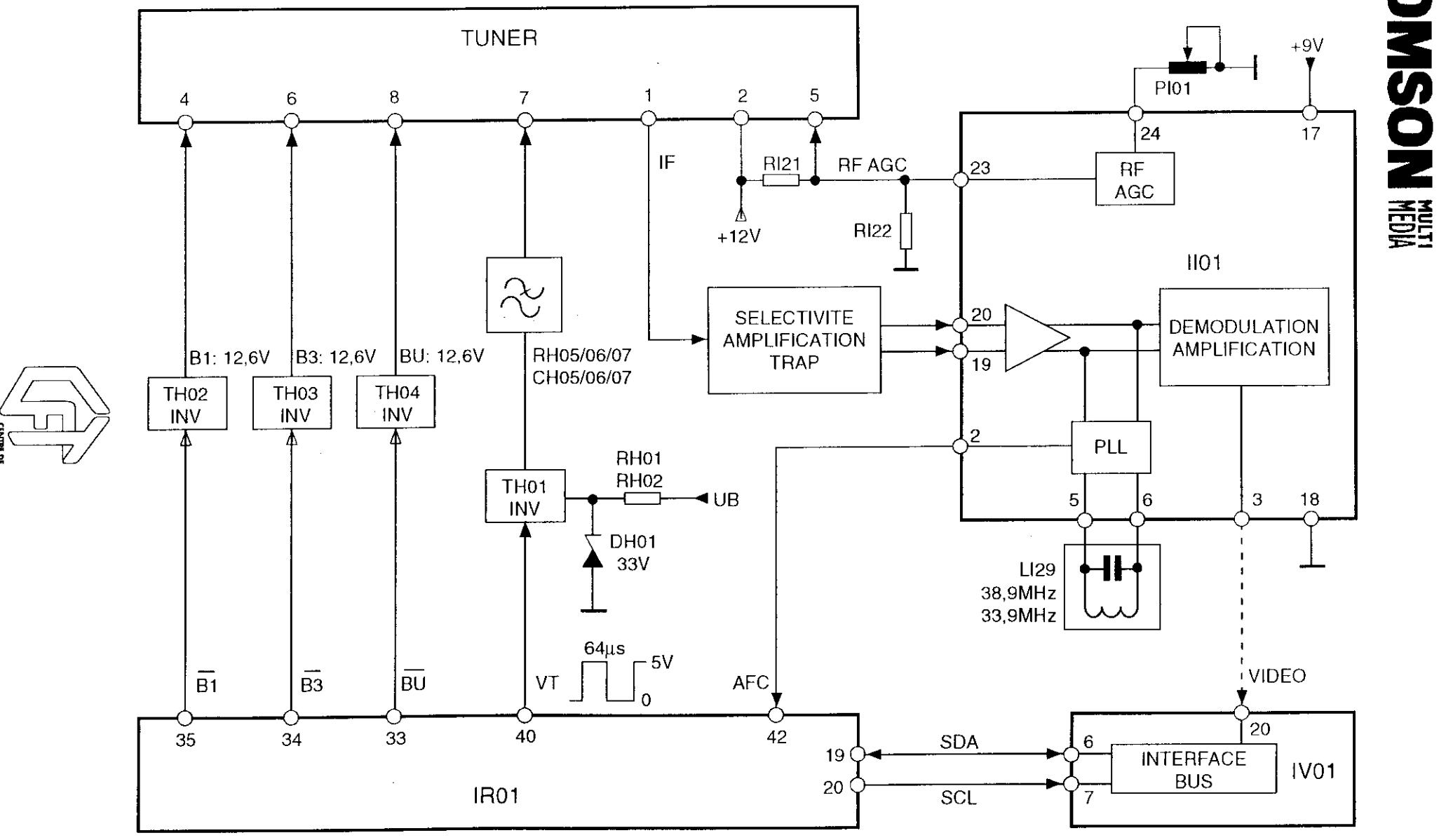
- VL: 45.25 MHz to 112.25 MHz
- VH: 119.25 MHz to 375.25 MHz
- U: 383.25 MHz to 863.25 MHz

In each of these ranges, the Varicap tension progresses from 0.8V to 33V. This Varicap voltage is obtained from the VT signal (period of 64 µs and a variable cyclic ratio) coming from output 40 of IR01.

The following information concerns the pins of the tuner.

PINS	REMARKS
1	I.F. output
2	12V power supply
4	12.6V input in VL (B1)
5	CAG HF input
6	12.6V input in VH (B3)
7	Varicap voltage input (0.8 to 33V)
8	12.6V input in U (BU)

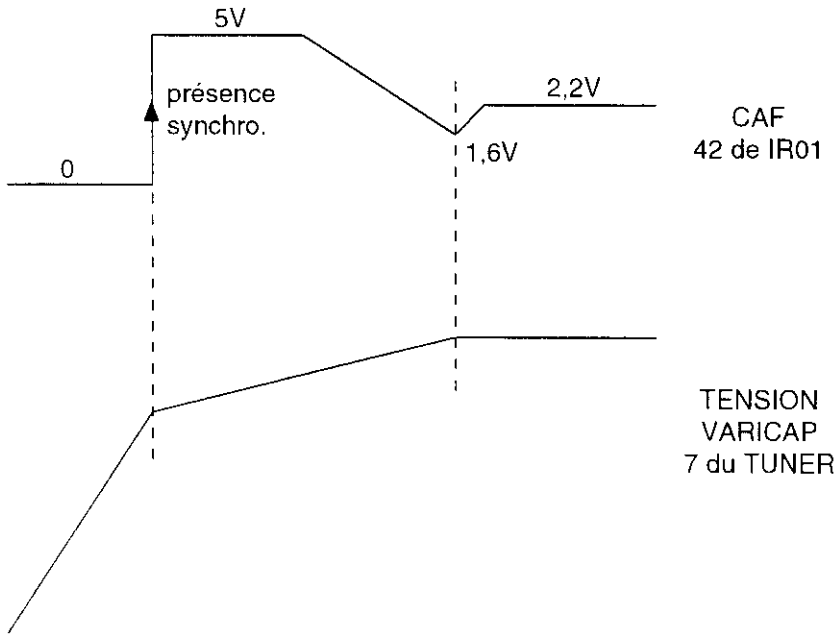
N.B.: pin 4 is at 12V in VH because of the DH09 diode installed in the tuner between its pins 6 and 4.


TUNER
4
6
8
7
1
2
5
IF
RI21
RF AGC
+12V
RI22
PI01
+9V
24
17
23
RF AGC
II01
SELECTIVITE AMPLIFICATION TRAP
20
19
DEMODULATION AMPLIFICATION
B1: 12,6V
B3: 12,6V
BU: 12,6V
TH02 INV
TH03 INV
TH04 INV
RH05/06/07
CH05/06/07
2
PLL
RH01
RH02
TH01 INV
UB
DH01
33V
5
6
3
18
LI29
38,9MHz
33,9MHz
64µs
5V
0
VIDEO
AFC
B1
B3
BU
VT
35
34
33
40
42
19
20
SDA
SCL
6
7
20
INTERFACE BUS
IV01
IR01

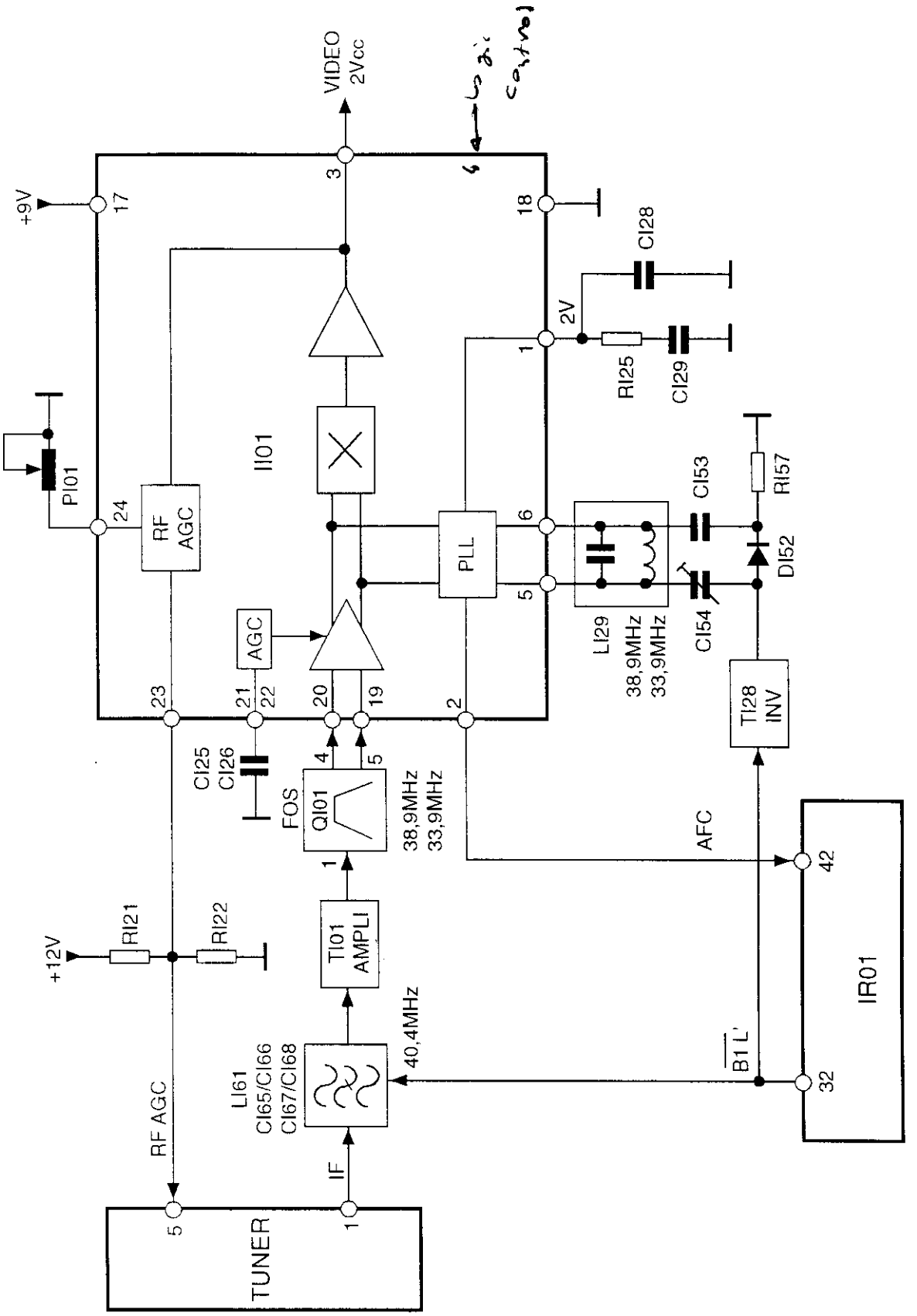
VOLTAGE SYNTHESIS

During a TV channel search, the IR01 µC delivers the VT Varicap diode tuning signal via its output 40. This signal is amplified and reversed by the TH01 transistor. This TH01 transistor is supplied in 33V thanks to the UB voltage and to the DH01 Zener diode. Then a low-pass filter (RH05/06/07, CH05/06/07) transforms this signal into direct-current voltage.

When a transmitter is found, IR01 is informed of this by IV01 (synchro presence) via the 12C bus. A slowing down in the progression of the Varicap voltage should follow. Then, with the "S" of AFC informing pin 42 of IR01, the received transmitter will be fine-tuned.



CHANNELS SEARCH FORWARD



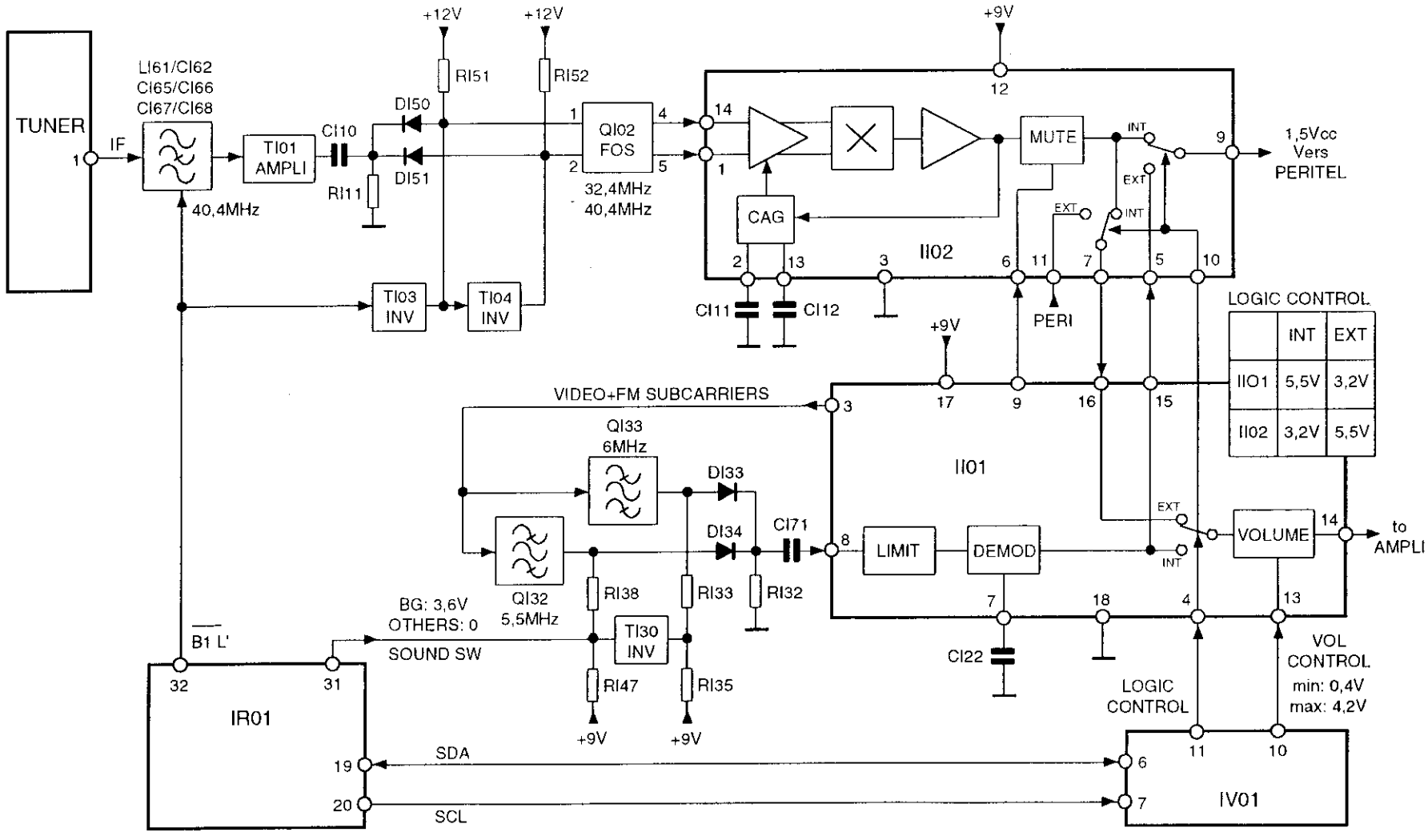
CENTRE DE FORMATION TECHNIQUE

PICTURE INTERMEDIATE FREQUENCY

The II01 integrated circuit (STV8224A), wired to the frame structure, is used for this picture I.F. It includes the (positive and negative) demodulation stages as well as the C.A.Gs.

The QI01 input template has 2 vestigial sidebands, 33.9 MHz for the 1L' band and 38.9 MHz for the other standards and bands.
The tuning frequency of the demodulation spin wheel (LI29) is commutable by output 32 of IR01 via TI28. The latter is 33.9 MHz in 1L' band and 38.9 MHz for the other standards and bands. The CI54 adjustable capacitor is in operation in band 1L'.

At the tuner output, a 40.4 MHz rejector is taken out of service in band 1L'.


TUNER
1
IF
LI61/CI62
CI65/CI66
CI67/CI68
40,4MHz
TI01
AMPLI
CI10
RI11
DI50
DI51
+12V
RI51
+12V
RI52
QI02
FOS
32,4MHz
40,4MHz
TI03
INV
TI04
INV
+9V
12
14
1
CAG
MUTE
INT
EXT
9
1,5Vcc
Vers
PERITEL
2
13
3
II02
6
11
7
5
10
CI11
CI12
PERI
LOGIC CONTROL
INT
EXT
IIO1
5,5V
3,2V
II02
3,2V
5,5V
+9V
VIDEO+FM SUBCARRIERS
3
17
9
16
15
QI33
6MHz
II01
DI33
DI34
CI71
8
LIMIT
DEMOD
VOLUME
14
to
AMPLI
QI32
5,5MHz
RI38
RI33
RI32
7
18
4
13
BG: 3,6V
OTHERS: 0
SOUND SW
TI30
INV
CI22
VOL
CONTROL
min: 0,4V
max: 4,2V
B1 L'
32
31
IR01
RI47
RI35
+9V
+9V
LOGIC
CONTROL
11
10
SDA
19
6
20
SCL
7
IV01

SOUND INTERMEDIATE FREQUENCY

LL' STANDARDS

The II02 integrated circuit (STV8225) with the QI02 template are used. The central frequency of the template is commutated from 40.4 MHz in band 1L' to 32.4 MHz in bands 3, 4, 5 LL'. This commutation is performed by output 32 of IR01, the TI03/04 transistors and the DI50/51 diodes.

BGI STANDARDS

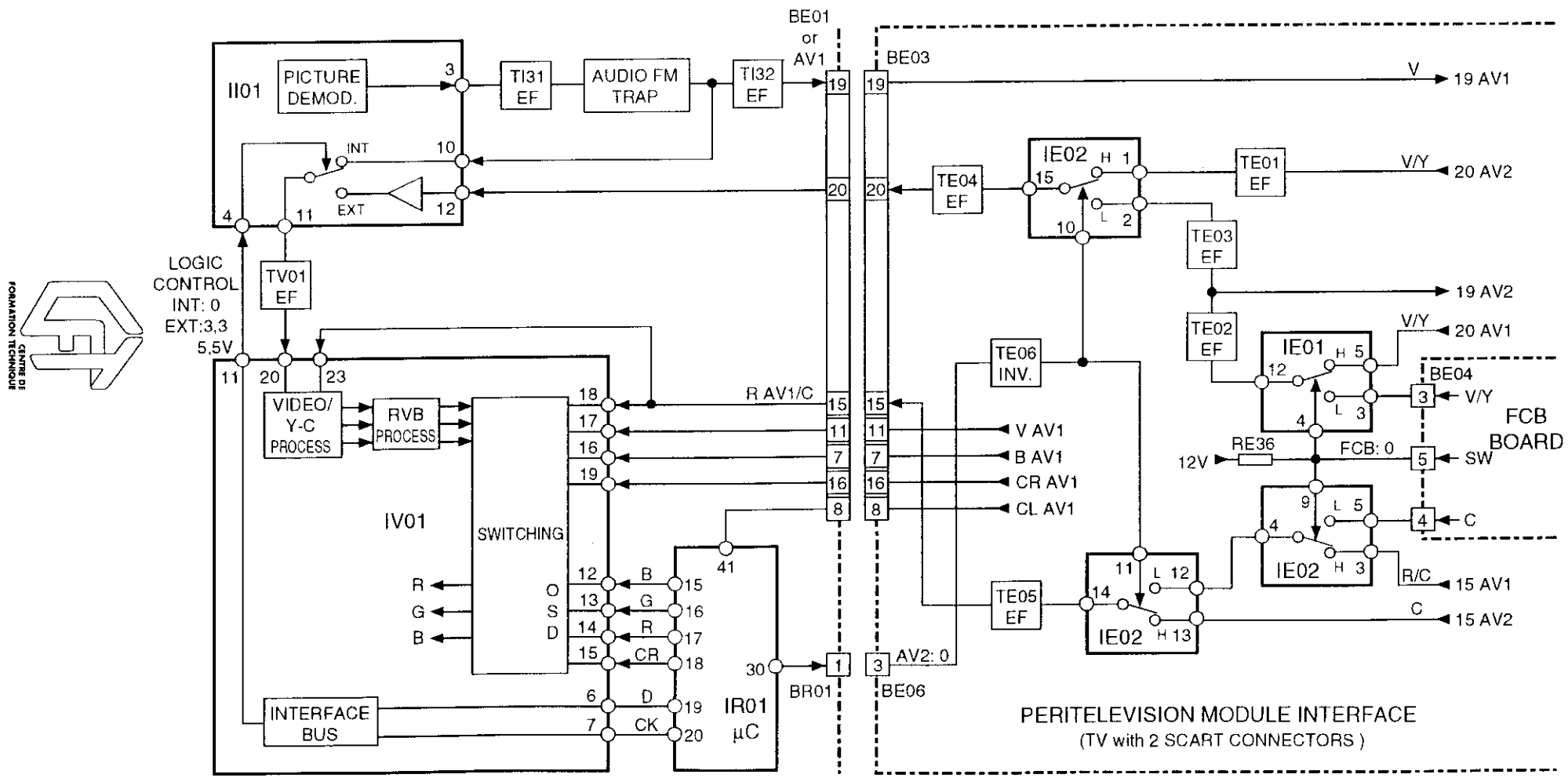
The II01 integrated circuit (STV8224) with the QI32/33 band-pass filters are used. Output 31 of IR01, the TI30 transistor and the DI33/34 diodes will bring the QI32 filter into operation in BG and the QI33 filter in I.

INSTRUCTIONS

The LOGIC CONTROL instruction coming from IR01 via the I2C bus and IV01 carries out the INTERNAL/EXTERNAL audio commutation in II01 and II02.
The volume instruction, coming from IR01 via the I2C bus and IV01, acts in II01.

	Logic control	II01	II02
BG	0 v	INT	EXT FM
LL'	3,2 v	EXT	INT a INT b
LL'	5,5 v	EXT	INT a EXT AV
BG AV	8,5 v	EXT	EXT FM EXT AV

COMMUTATIONS


II01
PICTURE DEMOD.
TI31 EF
AUDIO FM TRAP
TI32 EF
INT
EXT
LOGIC CONTROL
INT: 0
EXT:3,3
5,5V
TV01 EF
VIDEO/ Y-C PROCESS
RVB PROCESS
IV01
SWITCHING
OSD
R
G
B
INTERFACE BUS
IR01 µC
BE01 or AV1
BR01
R AV1/C
V AV1
B AV1
CR AV1
CL AV1
BE03
BE06
AV2: 0
V
19 AV1
V/Y
20 AV2
19 AV2
V/Y
20 AV1
R/C
15 AV1
C
15 AV2
TE04 EF
TE01 EF
TE03 EF
TE02 EF
TE06 INV.
TE05 EF
IE02
IE01
BE04
FCB BOARD
RE36
12V
FCB: 0
SW
PERITELEVISION MODULE INTERFACE
(TV with 2 SCART CONNECTORS)

VIDEO COMMUTATIONS

TV WITH ONE SCART SOCKET

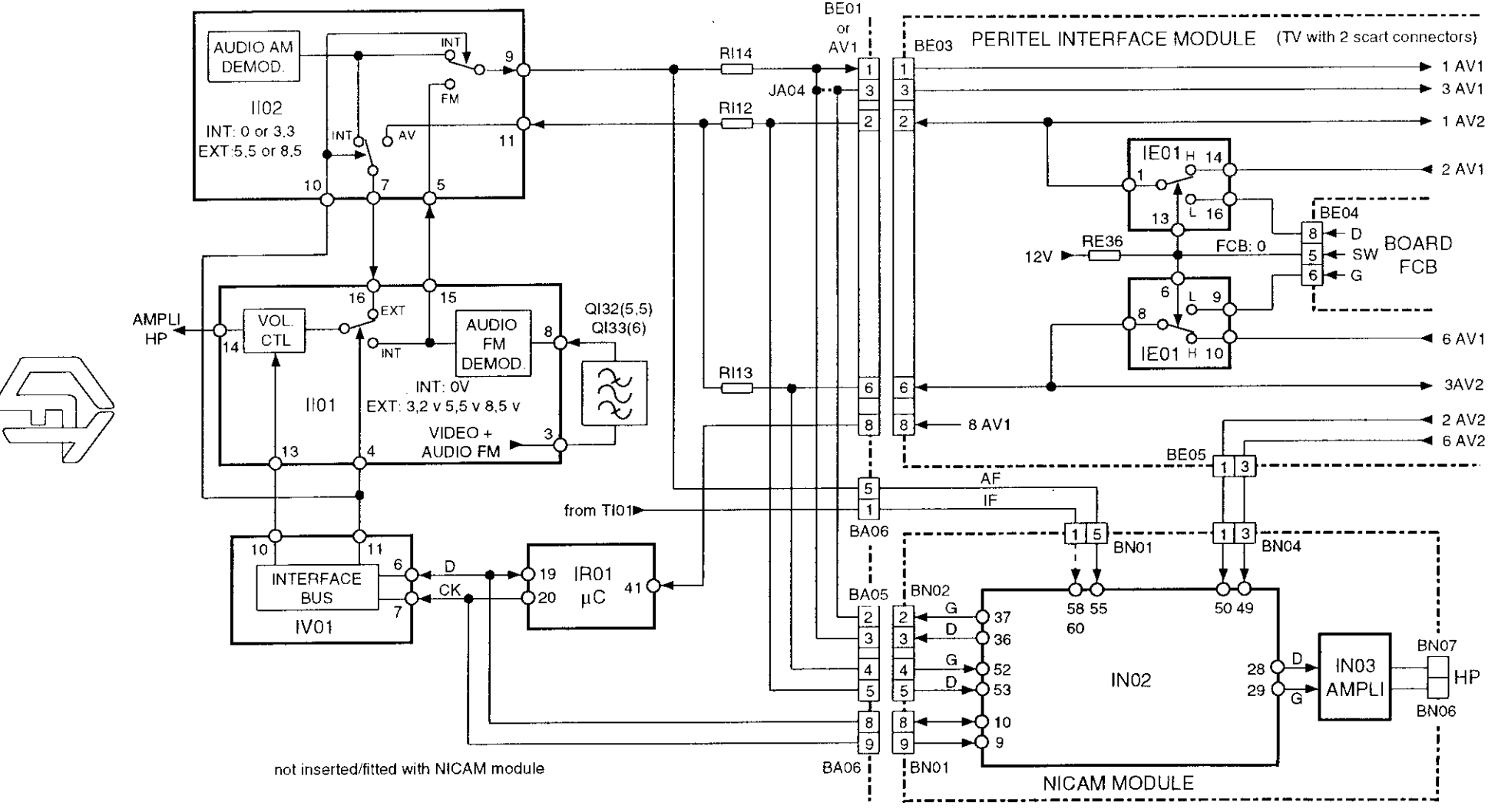
The TV/AV commutation is performed in the II01 integrated circuit by the LOGIC CONTROL information coming from output 11 of IV01.

TV WIITH TWO SCART SOCKETS

The IE01 and IE02 integrated circuits of the SCART INTERFACE module perform the video or Y/C commutations coming from the AV1, AV2 and FCB.
The SW (FCB) and AV2 IR01) information controls the IE01 and IE02 circuits.
The II01 integrated circuit performs the commutation between the video TV and the video/luminance AV (AV1/AV2/FCB) through the LOGIC CONTROL information coming from output 11 of IV01.

RGB COMMUTATIONS

The RGB commutation, TV/OSD or TTX/AV1, is done in IV01. The OSD or TTX (15 of IV01) and AV1 (19 of IV01) quick commutations as well as the IR01 µC via the IIC bus manage these RGB commutations.


AUDIO AM DEMOD.
II02
INT: 0 or 3,3
EXT:5,5 or 8,5
INT
FM
AV
AMPLI HP
VOL. CTL
EXT
AUDIO FM DEMOD.
II01
INT: 0V
EXT: 3,2 v 5,5 v 8,5 v
VIDEO + AUDIO FM
QI32(5,5)
QI33(6)
INTERFACE BUS
IV01
D
CK
IR01
µC
from TI01
BE01 or AV1
BE03
PERITEL INTERFACE MODULE
(TV with 2 scart connectors)
RI14
RI12
RI13
JA04
1 AV1
3 AV1
1 AV2
2 AV1
6 AV1
3AV2
8 AV1
2 AV2
6 AV2
IE01
RE36
12V
FCB: 0
BE04
BOARD FCB
SW
BE05
AF
IF
BA06
BA05
BN01
BN02
BN04
IN02
IN03 AMPLI
BN07
HP
BN06
NICAM MODULE
not inserted/fitted with NICAM module

AUDIO COMMUTATIONS

TV WITH ONE SCART SOCKET

The commutations are performed in the II01 and II02 integrated circuits by means of the LOGIC CONTROL information coming from output 11 of IV01.

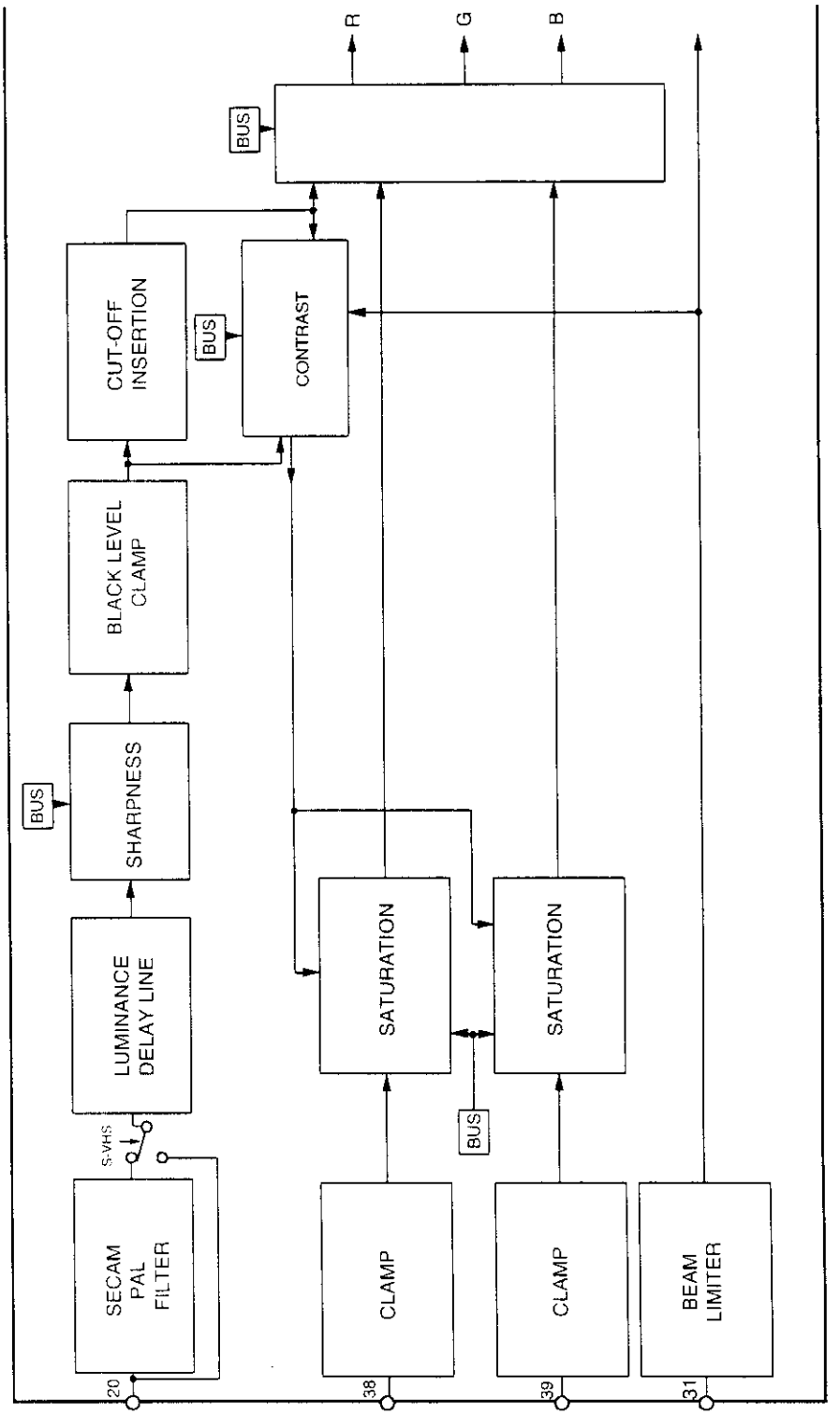
TV WITH ONE SCART SOCKET AND A NICAM MODULE

The commutations are performed in the II02 integrated circuit by means of the LOGIC CONTROL information, and in the IN02 integrated circuit by IR01 via the IIC bus. The audio signal processing part of II01 is not used. The RI12/13/14 are not wired.

TV WITH TWO SCART SOCKETS AND A NICAM MODULE

The IE01 integrated circuit enables the AV1 and FCB audio signals to be taken into account. The II02 integrated circuit, controlled by the LOGIC CONTROL information, selects the TV (AM) audio signal. The IN02 integrated circuit, controlled by IRR01 via the IIC bus, selects the TV (FM or NICAM) audio signal and the AV2 audio signal. The audio signal processing part of II01 is not used. The RI12/13/14 and JA04 are not wired.

LUMINANCE/CHROMINANCE


R
G
B
BUS
CUT-OFF INSERTION
BUS
CONTRAST
BLACK LEVEL CLAMP
BUS
SHARPNESS
LUMINANCE DELAY LINE
S-VHS
SECAM PAL FILTER
SATURATION
BUS
SATURATION
CLAMP
CLAMP
BEAM LIMITER
20
38
39
31

VIDEO CHROMA TREATMENT

INTRODUCTION

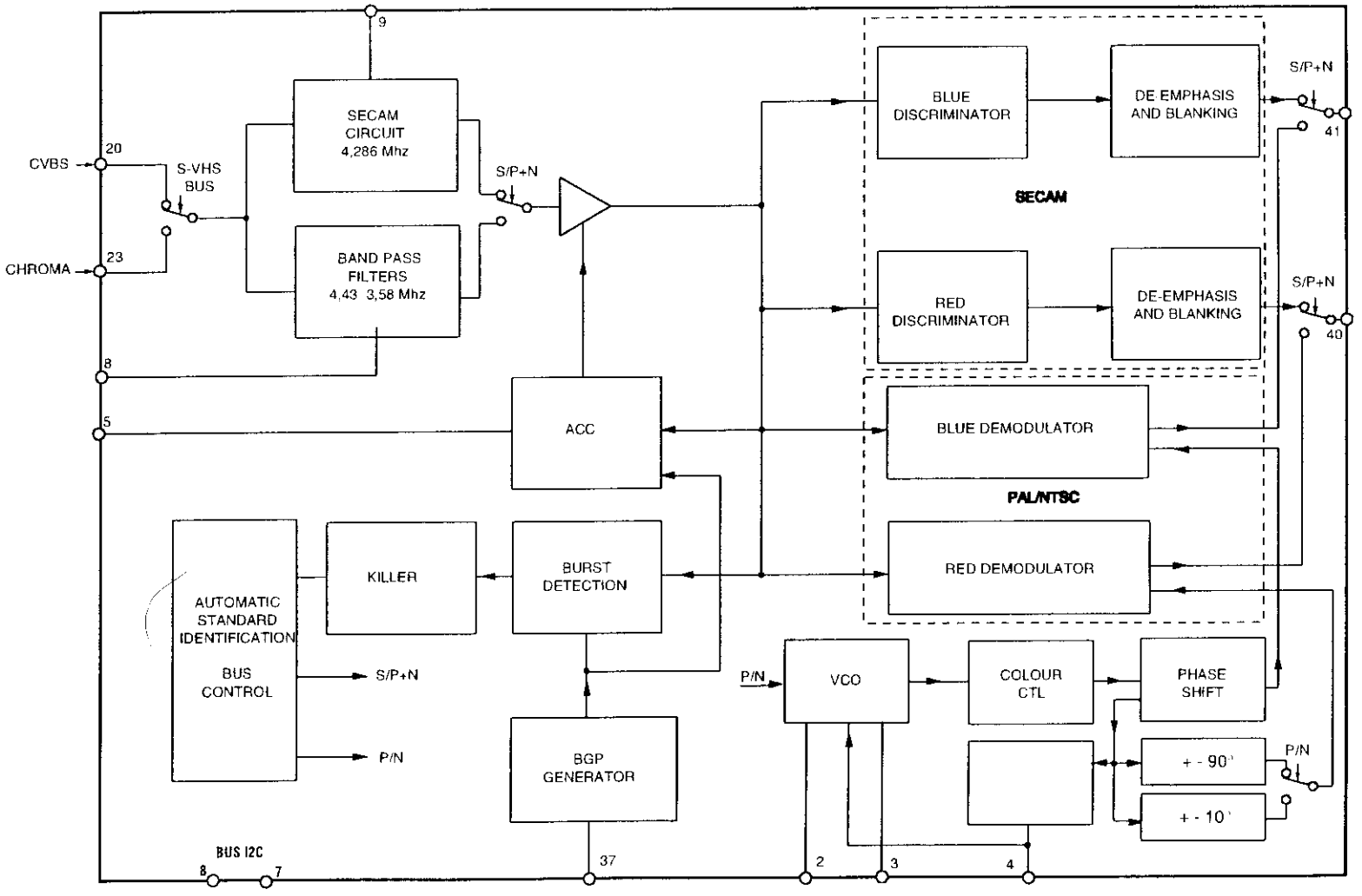
Video chroma treatment is performed by 2 integrated circuits, the STV2118 made by SGS THOMSON, which is a chroma/video/scanning processor associated with the TDA4665 (TX91) or STV2180 (TX92), which generates the chrominance line delay.

The STV2118 has 1 Y/C compatible CVBS input as well as 2 RGB inputs. It is fitted with an automatic cut-off control mechanism and is in contact with the management stage via the 12C bus.
The integrated circuit outputs (RGB) directly drive the amplifier stages on the C.R.T.

The chroma/video part has its own pin 22 power supply.

Television sets marketed in FRANCE are equipped with the STV2118 but, depending on the countries of destination, 2 other integrated circuits (see table) are wired in compliance with the chroma standards used.

	STV 2112	STV 2116	STV 2118
PAL	X	X	X
SECAM	X		X
NTSC		X	X



THOMSON MULTI MEDIA

CHROMINANCE TREATMENT

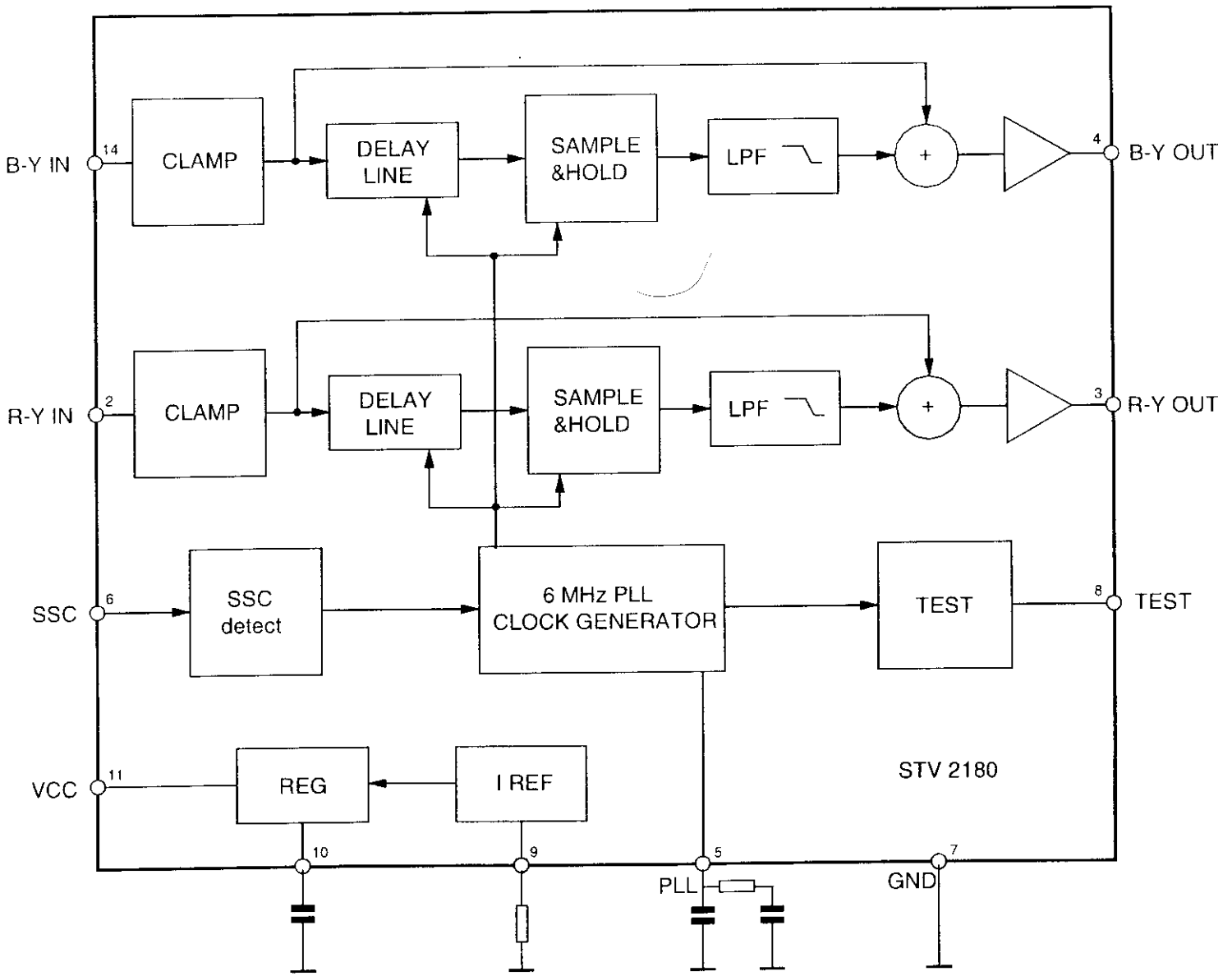
The colour subcarrier comes either from the pin 20 CVBS signal or from pin 23 if the Y/C option has been selected by the user.
The subcarrier passes through a band-pass filter tuned according to the standard sought.
Tuning is performed by a PLL loop, with the CC03 capacitor being the filter for the loop. In the case of SECAM, the band-pass filter (bell) is adjusted by a second PLL loop tuned during the raster returns, with the CC04 capacitor being the filter for this second loop.

The STV2118 functions in automatic standard search mode in compliance with 3 identification cycles:

PAL/NTSC 4, 43 - SECAM - PAL/NTSC3, 58

Each cycle lasts 40 ms, except for SECAM, where 2 sequences of 40 ms are required.
Selecting one of the crystals combined with a pin 4 loop filter enables the VCOs used for identification, the SECAM discriminators or the PAL/NTSC demodulators to be tuned.
During the search operation, the R-Y and B-Y outputs are inhibited.
The demodulation stages are commmuted in compliance with the identified standard:
In the case of SECAM, the subcarrier is then directed towards 2 discriminators. The chroma difference signals are de-emphasised and directed towards the integrated circuit output by a commutation stage.
In PAL and NTSC, after demodulation, the signals are directed towards the same output stage as for SECAM (the CC02 capacitor performs the subcarrier AGC).

The chroma difference signals are available at pin 40 and 41 output and are routed towards the delay lines.



THOMSON MULTI MEDIA

THE CHROMA DELAY LINE

For passing band reasons, the delay of 64 us in chroma treatment is caused after demodulation of the subcarrier.
The principle used is a capacitive network through which the signal is conveyed at the rate of a 3 MHz clock managing load transfers.
This clock is produced thanks to a 6 MHz PLL loop in phase with the SSC.
190 capacities are used to generate a delay of 64 us as well as 192 clock chimes.

$$\frac{1}{3\ \text{Mhz}} = 333\text{ns} \times 192 = 64\text{us}$$

For each R-Y and B-Y signal, a direct channel and a delayed channel are available and the commutation timing of the 2 channels depends on the decoded standard:

- In PAL, an addition is carried out (correction of the phase errors). The output signal doubles in amplitude in relation to the input.

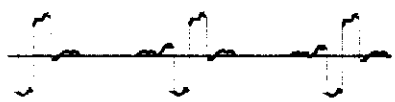
- In SECAM, the delay line enables the input signal to be recopied over 2 consecutive lines.

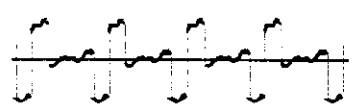
- In NTSC, the delay line is transparent but the amplitude of the signals is doubled.

At the exit to the 2 delay lines, the chroma difference signals are directed towards the video processing unit by pins 38 and 39 of the STV2118A.

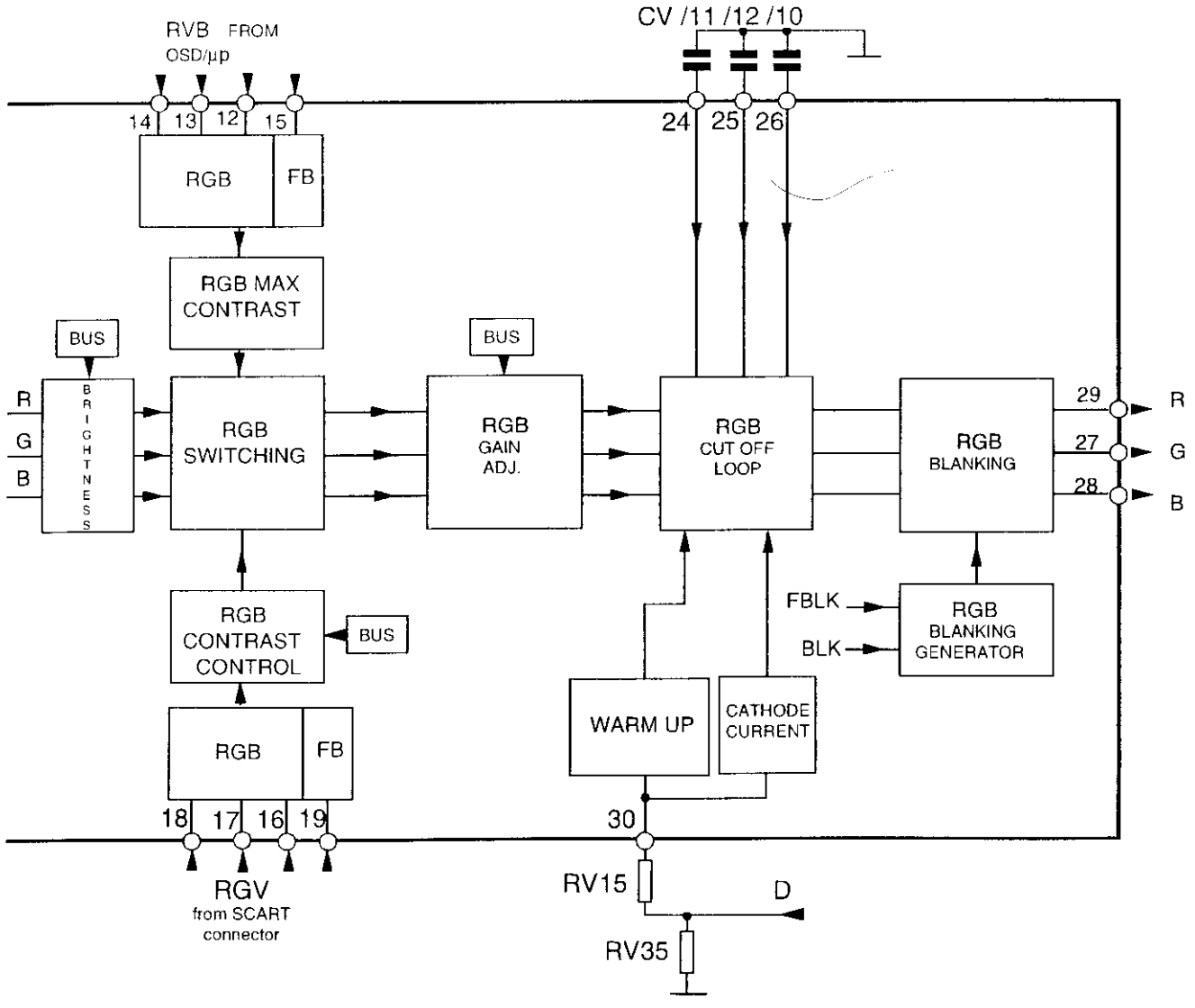
SECAM Input/Output timing

PAL Input/Output timing





CENTRE DE FORMATION TECHNIQUE



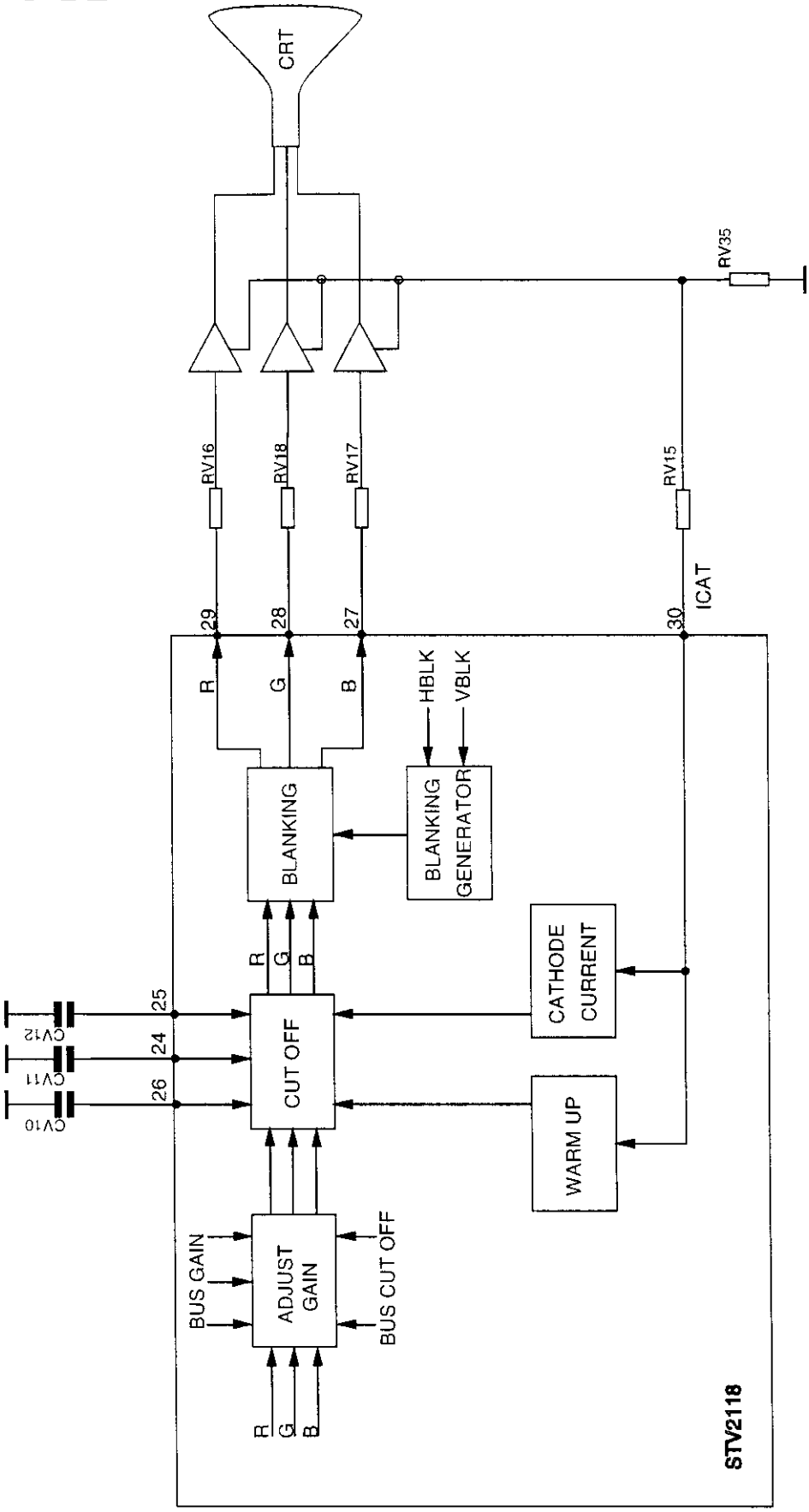
THOMSON MULTI MEDIA

VIDEO PROCESSING

3 inputs towards the processing unit may be selected:

- Y, R-Y, B-Y coming from chroma processing and an interference trap filter for the luminance (interference trap filter disconnected if the Y/C input is selected),
- RGB (1) coming from the microcontroller (OSD menu) or TXT treatment,
- RGB (2) coming from the SCART AV1 connector.

Luminance treatment integrates the Y delay 360 ns in PAL and 460 ns in SECAM) before undergoing an outline or contrast correction. The signal is then matrixed with the chroma difference signals whose amplitude has been determined by saturation adjustment.
Once the light has been set, the RGBs are directed towards the commutation stage, where the external RGBs combined with the FB1 and FB2 are routed.
RGB (1) is always at maximum contrast whereas the contrast of RGB (2) may be adjusted by the user.
All adjustments are carried out by the 12C bus.



CENTRE DE FORMATION TECHNIQUE

AUTOMATIC CUT-OFF CONTROL

The colours are kept at the same temperature by automatic cut-off control.

Via pin 30 ICAT information, the integrated circuit receives information when alive which is the image of the power output of the 3 cathodes. While the cathodes heat up (ICAT less than 1.7 volts), the automatic cut-off control is inhibited (warm-up).

Three measuring lines are inserted during the raster return at RGB matrixing level.
The power output, measured in sequence for these three lines, is compared to an internal reference; the resulting error voltage is used to clamp the signal at output. This voltage is used for the whole duration of the partial interlaced picture frame and is memorised in a clamping capacitor.
CV10 for the red
CV11 for the green
CV12 for the blue

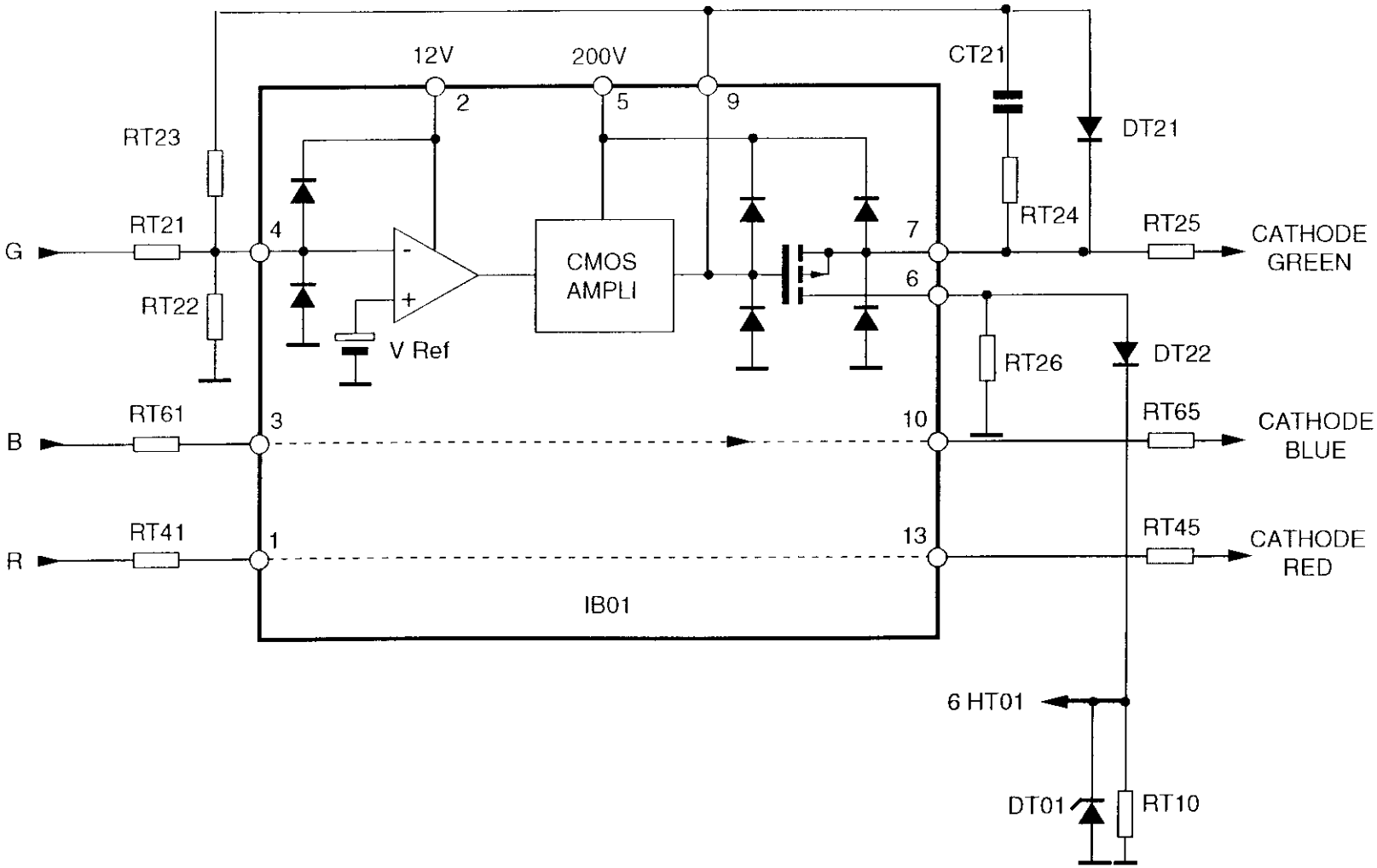
The vertical and horizontal erase stage is inserted at the output of STV2118.
ADJUSTING/SETTING

Two of the 3 reference voltages used for automatic cut-off control may be adjusted by means of the software, with the blue channel being used as a reference.

The amplifier gains are adjustable and enable the maximum value of the white level to be determined.

These settings are accessible in the video menu of the service mode.

PAV


12V
200V
CT21
DT21
RT23
2
5
9
RT21
4
G
RT22
CMOS
AMPLI
7
RT24
RT25
CATHODE
GREEN
6
V Ref
RT26
DT22
RT61
3
10
RT65
B
CATHODE
BLUE
RT41
1
13
RT45
R
CATHODE
RED
IB01
6 HT01
DT01
RT10

THE CRT MODULE WITH TEA5101.

The TEA5101 (IB01) integrated circuit is used. It comprises:

- 3 differential amplifiers whose gain is fixed by an external reverse feedback,
- 3 PMOS transistors which directly supply the control signal for the 3 cathodes (pins 7, 10 and 13) as well as power output information (pins 6, 11 and 14),
- diodes for protection against tube arkings,
- a reference voltage for the differential amplifiers; the 13 volts (pin 2) is used.

The RC cell (RB26 CB26 for the red) limits the pass-band of the stage (5 MHz).
The differential amplifier gain is fixed by RT41 and RT43 for the red channel. RT42 determines the continuous level of the output.

The TB18 transistor limits the ICUT overall information, the amplifier power output image, to 4 volts.

BLACKOUT OF THE SPOT

When the television set is working, CB03 is charged to 150 volts via RB06 and DB04. The G1 grid voltage is close to 0.6 volts.
When it is switched off, when the 200 volts disappears, the CB03 capacitor becomes a voltage generator and polarises the G1 grid at -150 volts.

THE CRT MODULE WITH TEA5101 (TX92)

The TEA5101 (IB01) integrated circuit is used. It comprises:

- 3 differential amplifiers whose gain is fixed by an external reverse feedback,
- 3 PMOS transistors which directly supply the control signal for the 3 cathodes (pins 7, 10 and 13) as well as power output information (pins 6, 11 and 14),
- diodes for protection against tube arkings,
- a reference voltage for the differential amplifiers; the 13 volts (pin 2) is used.

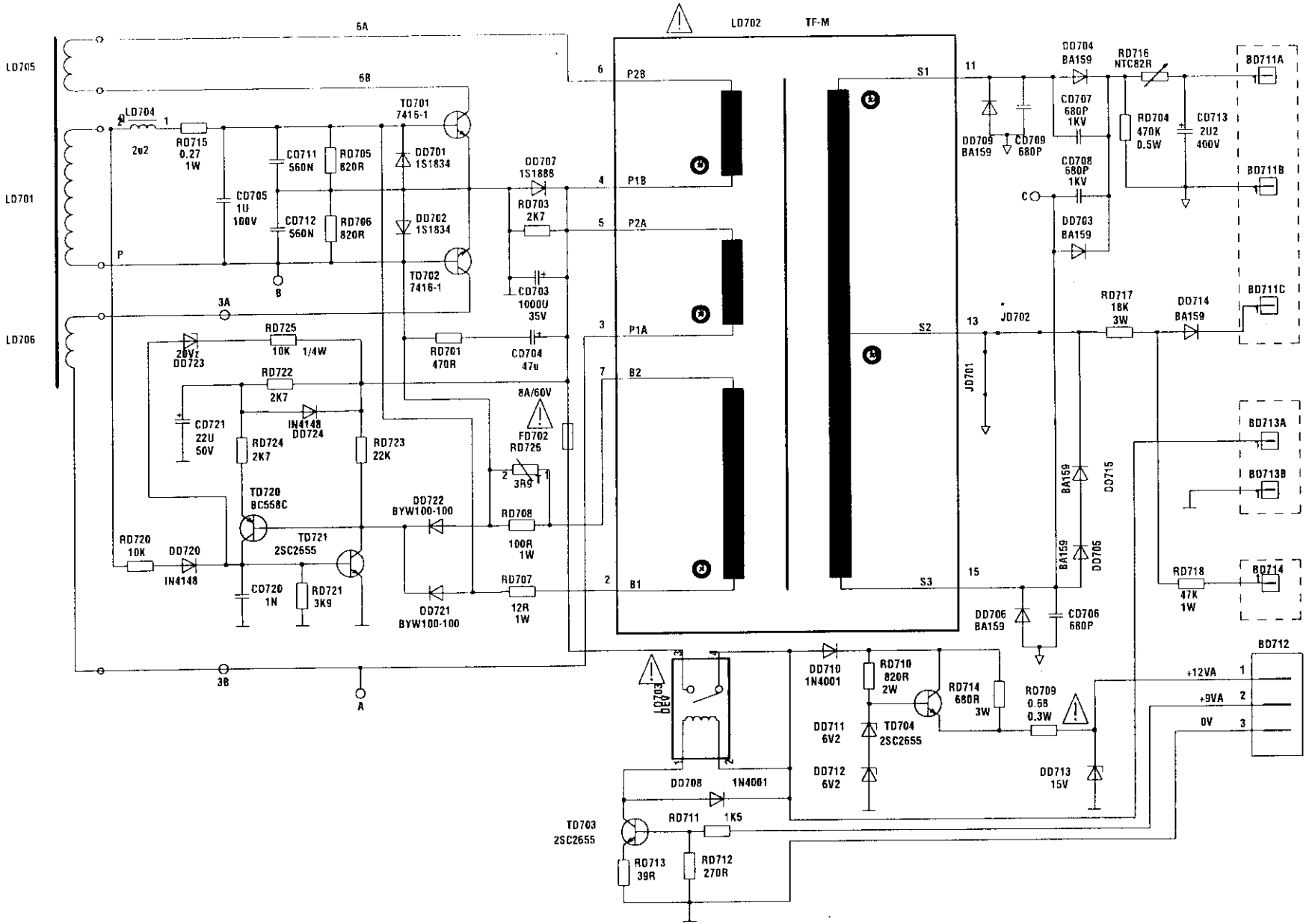
The RC cell (RB26 CB26 for the red) limits the pass-band of the stage (5 MHz).
The differential amplifier gain is fixed by RT41 and RT43 for the red channel. RT42 determines the continuous level of the output.

The TB18 transistor limits the ICUT overall information, the amplifier power output image, to 4 volts.

THOMSON MULTI MEDIA

THE DC-DC CONVERTER

CENTRE DE FORMATION TECHNIQUE

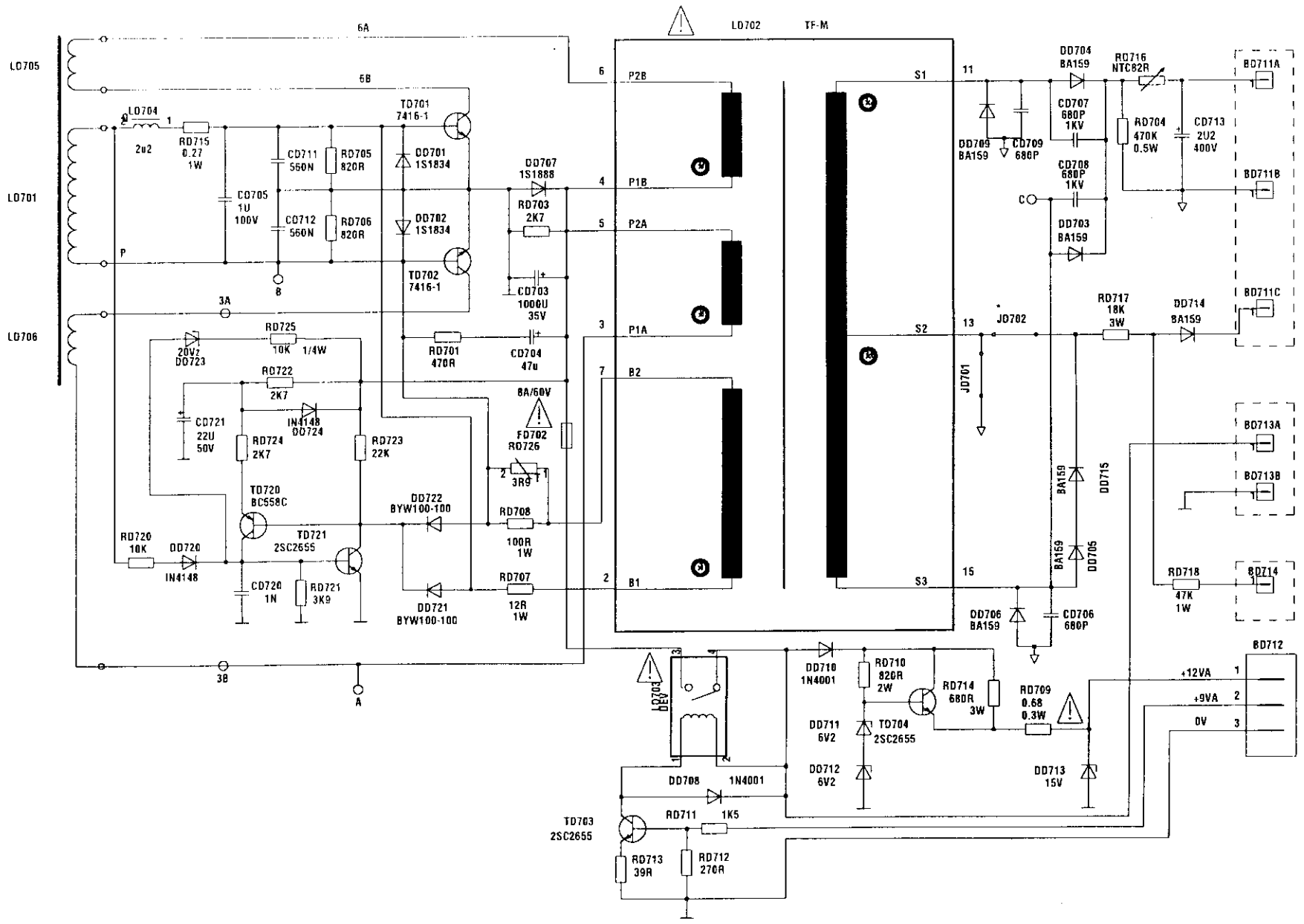

LD705
LD701
LD706
6A
6B
3A
3B
LD704
2u2
RD715 0.27 1W
CD705 1U 100V
CD711 560N
CD712 560N
RD705 820R
RD706 820R
TD701 7415-1
TD702 7416-1
DD701 1S1834
DD702 1S1834
DD707 1S1888
RD703 2K7
CD703 1000U 35V
RD701 470R
CD704 47u
RD725 10K 1/4W
20Vz DD723
RD722 2K7
CD721 22U 50V
IN4148 DD724
RD724 2K7
RD723 22K
TD720 BC558C
TD721 2SC2655
RD720 10K
DD720 IN4148
CD720 1N
RD721 3K9
DD722 BYW100-100
DD721 BYW100-100
8A/60V
FD702 RD725 3R9
RD708 100R 1W
RD707 12R 1W
LD702 TF-M
P2B
P1B
P2A
P1A
B2
B1
S1
S2
S3
DD704 BA159
RD716 NTC82R
DD709 BA159
CD709 680P
CD707 680P 1KV
CD708 680P 1KV
DD703 BA159
RD704 470K 0.5W
CD713 2U2 400V
BD711A
BD711B
BD711C
RD717 16K 3W
DD714 BA159
JD702
JD701
BA159
DD715
BA159
DD705
DD706 BA159
CD706 680P
BD713A
BD713B
RD718 47K 1W
BD714
BD712
+12VA
+9VA
0V
DD710 1N4001
RD710 820R 2W
RD714 680R 3W
RD709 0.68 0.3W
DD711 6V2
DD712 6V2
TD704 2SC2655
DD713 15V
DD708 1N4001
RD711 1K5
TD703 2SC2655
RD713 39R
RD712 270R

INTRODUCTION

In order to be fed at low voltage, 12 or 24 volts, some TX91 frame structure television sets may be equipped with an extra module, the DC-DC converter, whose purpose is to develop a 300V voltage from a 12 or 24 volt source.

BRINGING INTO OPERATION

A +12VA regulated voltage is established from the external 12 or 24 volts by means of the TD704 ballast transistor. It enables the UX frame structure voltage to be relayed and supplies the IR02 regulator. The management stage is thus operational.
When the television set goes from standby mode to normal operating mode, the +9V frame structure current feed to the DC-DC module enables the TD703 transistor, which actuates the LD703 relay, to be saturated. The self-oscillating system of the converter starts up supplied by 12 or 24 volts.



THOMSON MULTI MEDIA
CENTRE DE FORMATION TECHNIQUE

OPERATION

The cycle begins with the conducting of TD702 via CD704 and RD701. A current forms in the 5-3 winding of LD702 and in the LD706 winding, inducing a voltage in LD701 which confirms the saturation of TD702.

When the current passing through TD702 and LD706 reaches a maximum, the voltage induced in LD701 disappears, causing TD02 to block. LD701 generates a voltage, opposite to the previous one, which causes TD701 to be conducted. A new cycle begins with, via TD701, a current being created in the 4-6 winding of LD702 and in the LD705 winding.

The frequency of these cycles varies according to the external mains voltage and the load of the secondary. TD720 and TD721 limit the TD701 and TD702 polarisations.

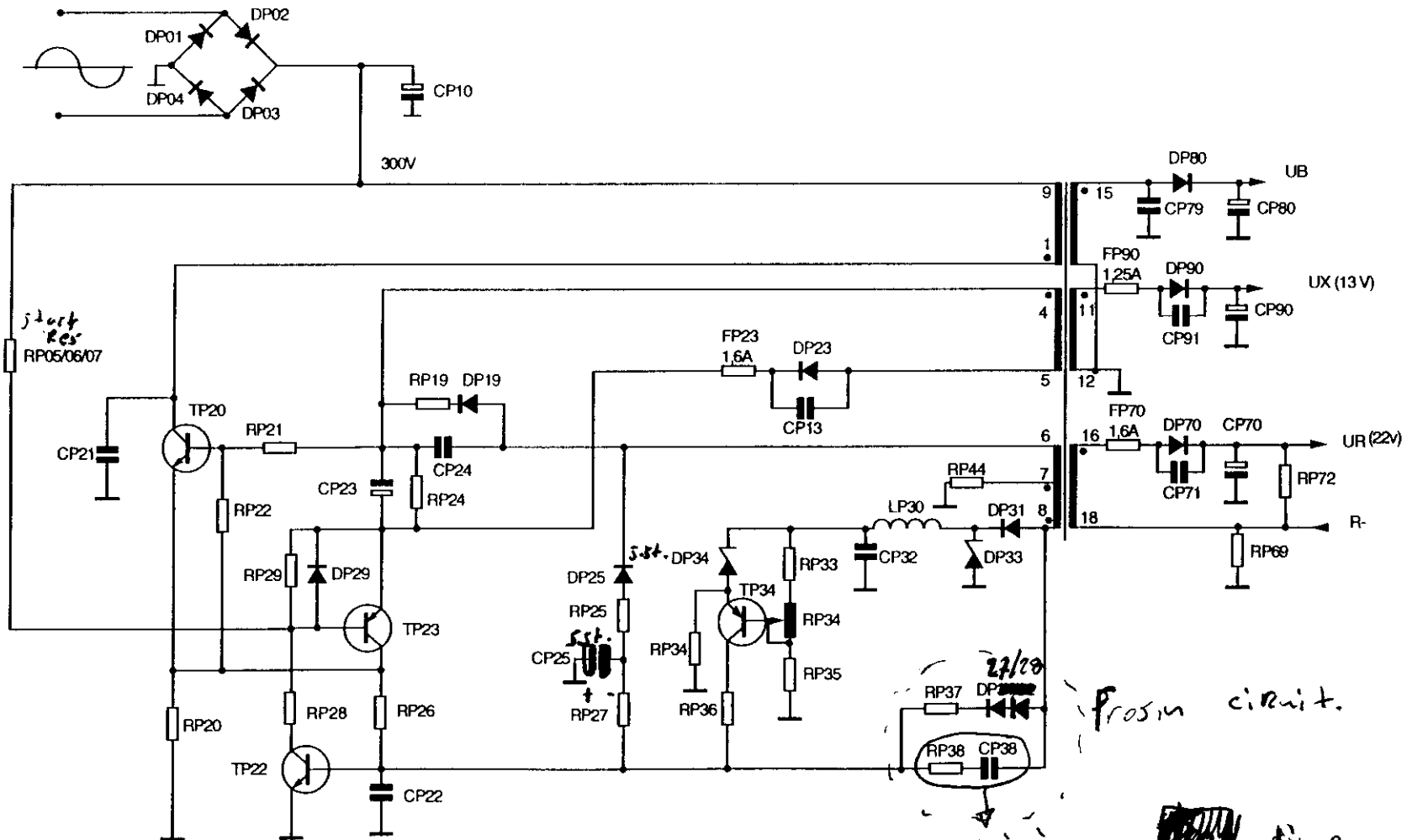
At the secondary, a double-alternation rectification by DD703 and DD704 enables a 300V charge to be obtained which is destined for the chopping feed, as well as a starting voltage to feed the TEA2261 in the start-up phase.

THOMSON MULTI MEDIA

TX91G
POWER SUPPLY

CENTRE DE FORMATION TECHNIQUE

THOMSON MULTI MEDIA



Prosin circuit.

minimum time

Χωρίς καμία τροφοδοσία ο ταλαντωτής στα 20kHz (0,2μs

Παρατηρώ ότι το minimum είναι 0,5μsec.

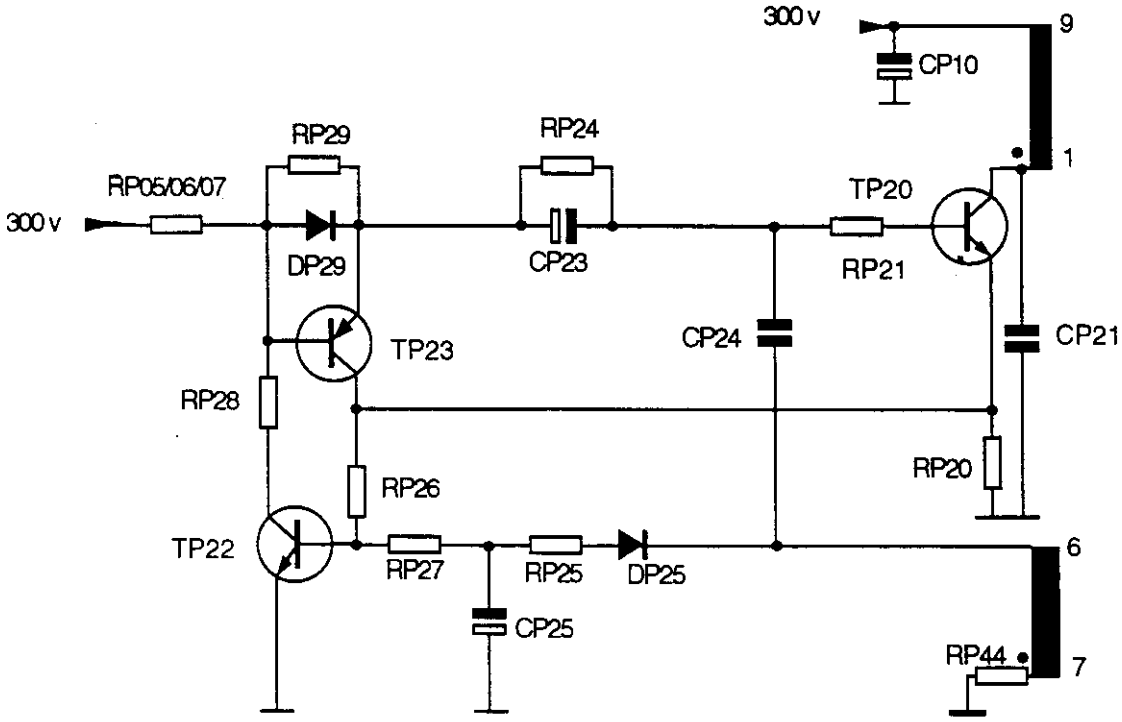
1-GENERAL

The power supply is a **FROSIN** (**FR**ee **O**scillating **S**afe **IN**telligent) one, new in design with discreet components.

The frequency is between 60 kHz and 80 kHz under normal operating conditions.
When not loaded, i.e. on standby, the power supply could increase to more than 100 kHz and, because of this, the switching transistor may be incorrectly deinhibited.
The wiring is such that the quenching frequency in standby mode is reduced to about 26 kHz.
In this way, the frequency is not audible and preserves the switching transistor.

The secondary voltages are similar to those of the TX91, namely UB, UX(13V), UA(22V).

Για έλεγχο στους 12 volts στην πρίζα του 220 και παρακάτω για αυτόματο 100Ω στην RP05/06/07



CENTRE DE FORMATION TECHNIQUE

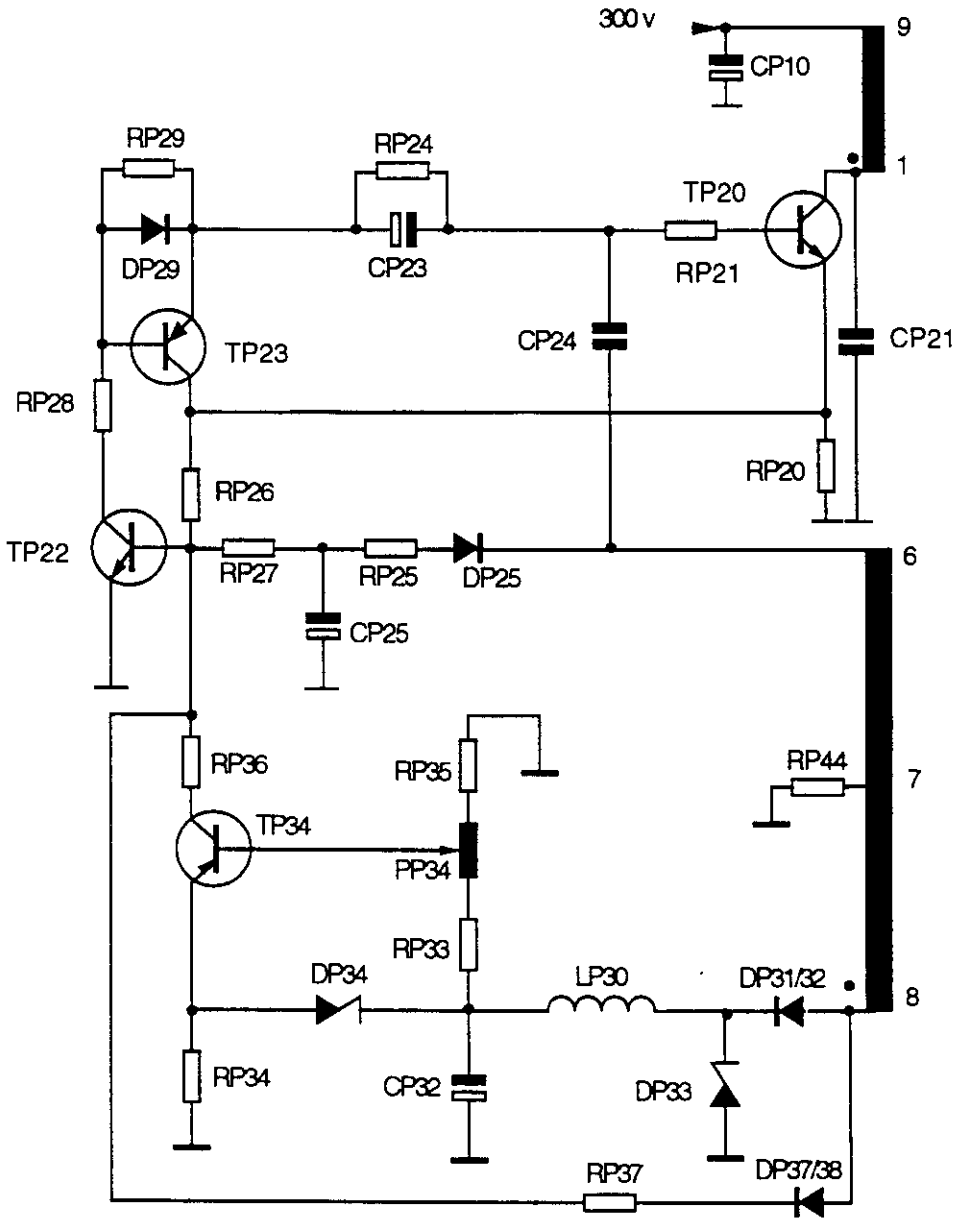
START-UP AND SOFT-START CIRCUIT

OFF to ON function.

The current coming from the 300V through RP05/06/07, RP29 and DP29 as well as the CP23 capacitor generates a TP20 basic current.
The No. 6 winding (forward) and CP24 enables the TP20 transistor to increase the base to transmitter current.

The whole current passes through RP20, and the potential at the terminals of this resistance saturates TP22/23 and blocks TP20 by CP23.

In order to prevent the TP20ne collector current from increasing too quickly, a soft start is performed by the No. 6 winding DP25, RP25, CP25 and RP27.



CENTRE DE FORMATION TECHNIQUE

REGULATION AND FROSIN CONTROL

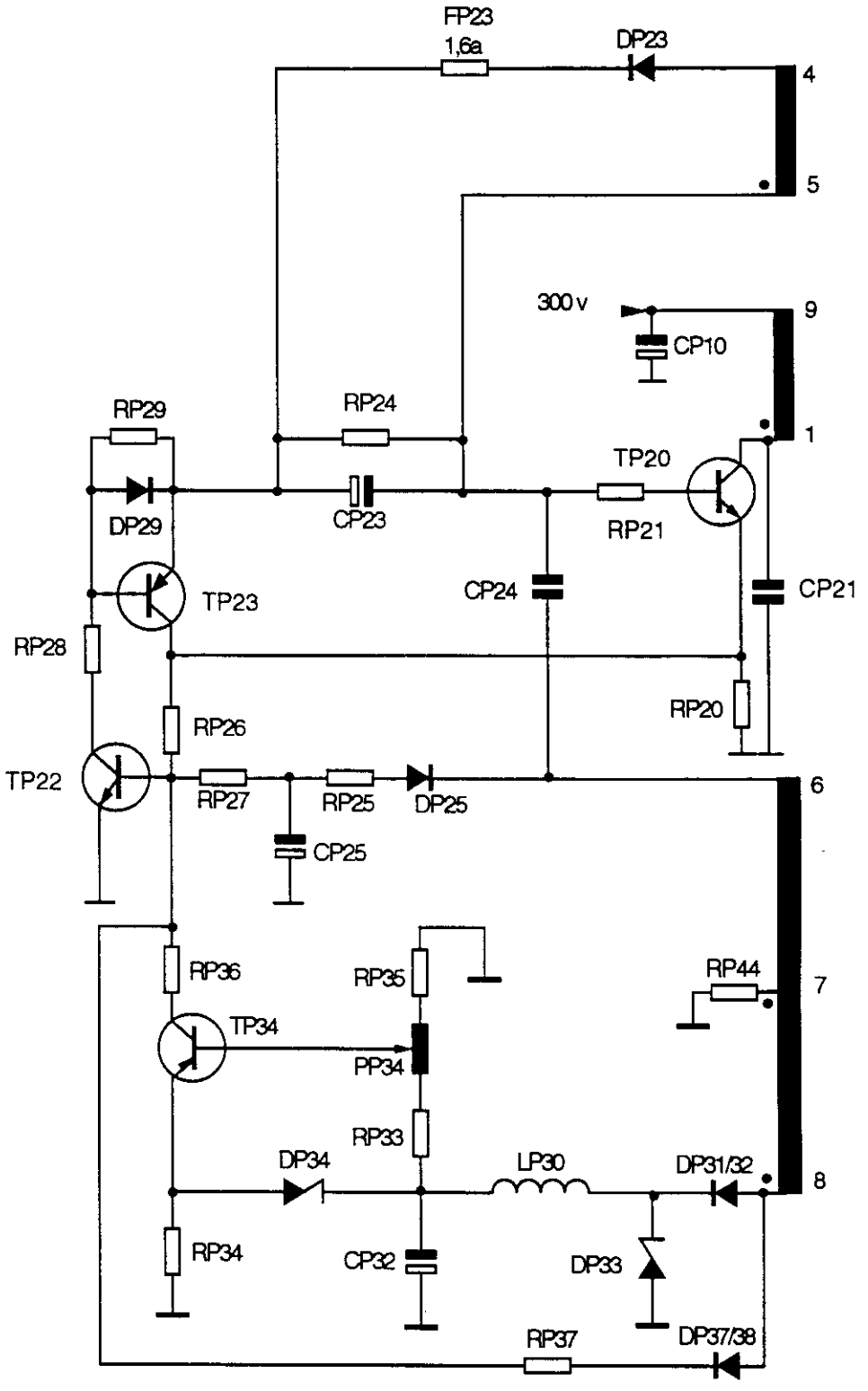
Regulation

The TP34 transistor is mounted in the comparator. Its transmitting potential is fixed by the DP34 Zener diode. The error voltage comes from the No.7/8 winding (which works in FLY-BACK mode) and by the PP34 potentiometer. The U system variation is deducted and applied to the PP34 base, thus correcting the Usystem variation.
The secondary voltages are determined by the PP34 variation.

Once the regulation order has been carried out in this way, it is compared with the voltage of the No. 6 winding, which works in FORWARD mode and determines the polarisation of T22.
The whole of this comparison determines the power consumed by the apparatus.

Frosin controls

The DP37/38 diodes and the RP37 resistor deliver a positive voltage during the FLY-BACK mode, thus prohibiting TP20 from being conducted during the FLY-BACK mode of the power supply.

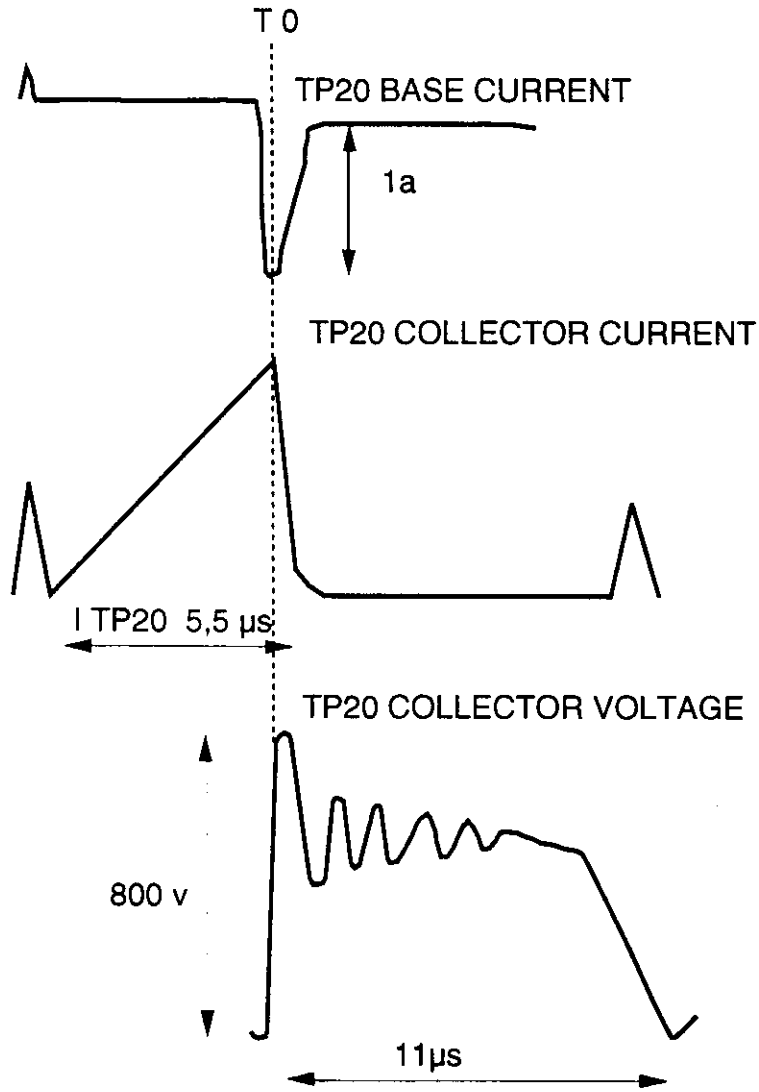

FP23
1,6a
DP23
4
5
300 v
9
CP10
RP29
RP24
1
TP20
DP29
CP23
RP21
CP24
CP21
TP23
RP28
RP20
RP26
TP22
RP27
RP25
DP25
6
CP25
RP36
RP35
RP44
7
TP34
PP34
RP33
DP34
LP30
DP31/32
8
RP34
CP32
DP33
RP37
DP37/38

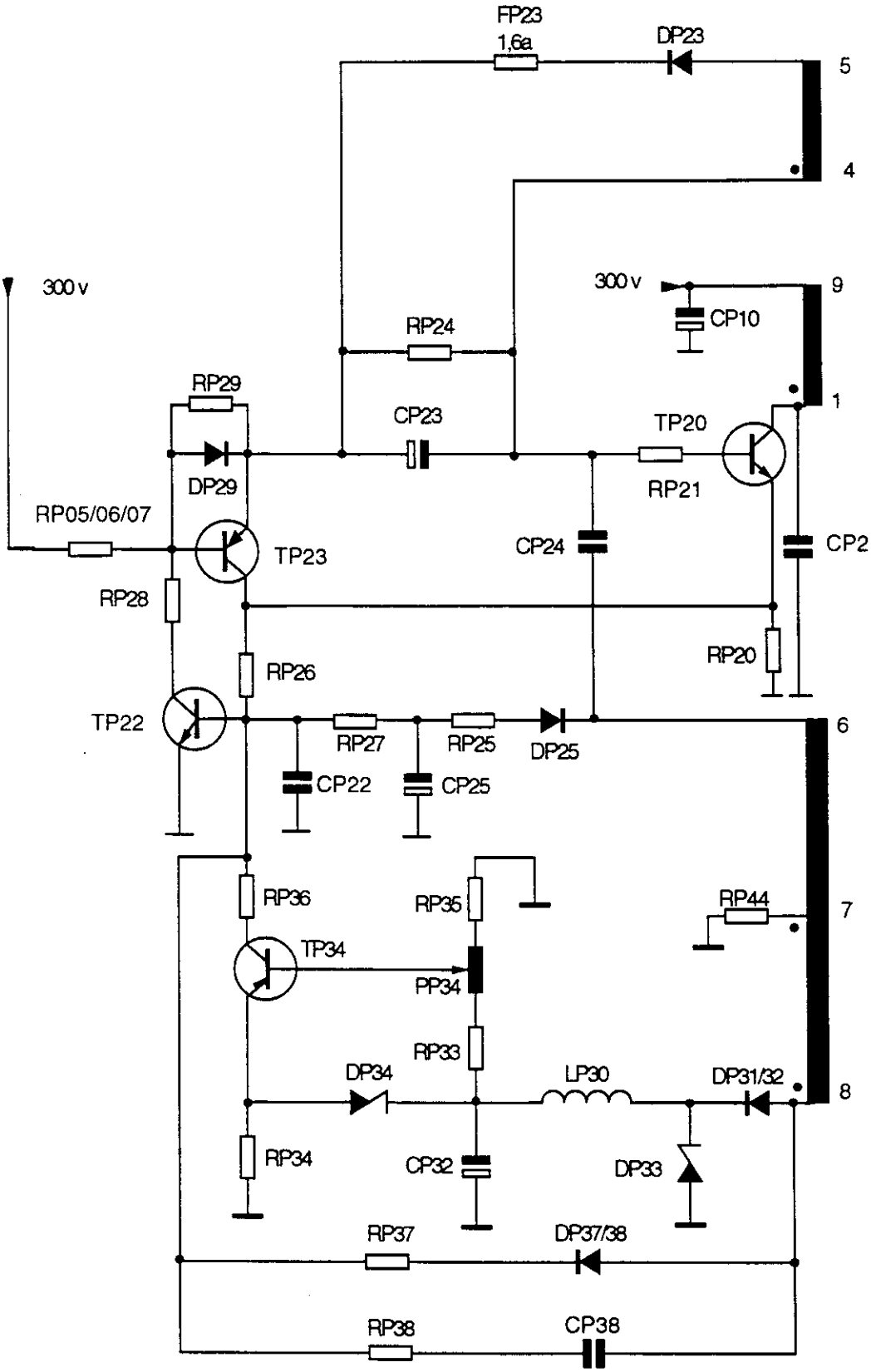
THE TP20 VOLTAGES AND CURRENTS

When the TP22 and TP23 transistors conduct, they discharge the CP23 capacity, thus applying a negative current to the TP20 base. Because of this, the transistor blocks, bringing about a power transfer to the secondaries.

The CP23 charge, performed by the No. 45 winding, which works in FORWARD mode, is therefore very high.

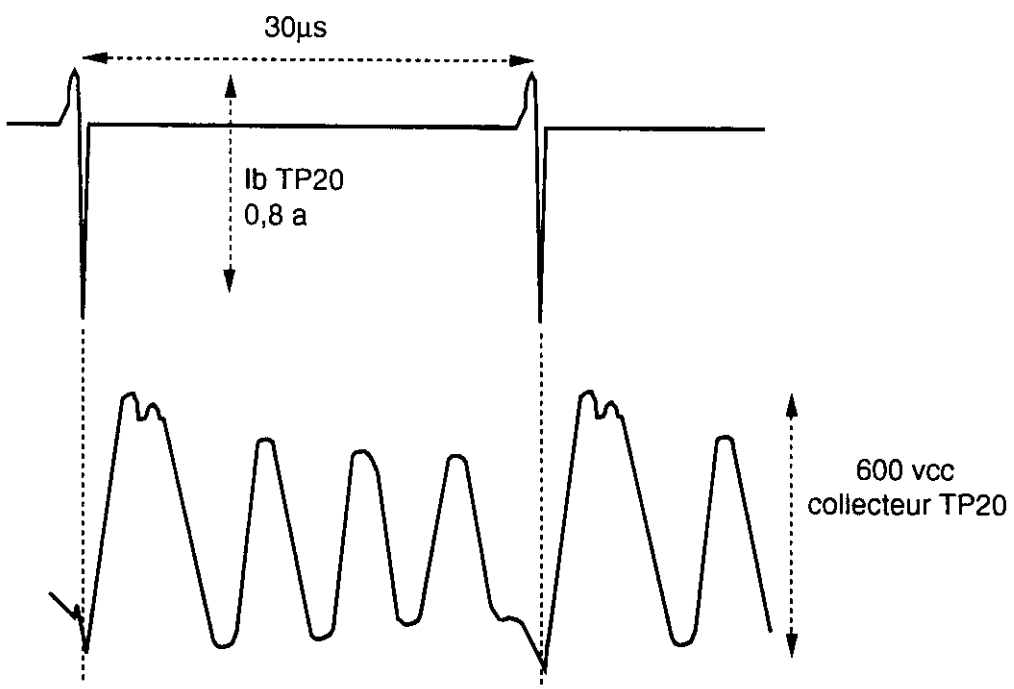
Given below are the voltage and currents linked to the TP20 commutation.





CENTRE DE FORMATION TECHNIQUE

STANDBY FUNCTION

In standby mode, regulation is inhibited, and because of this the oscillatory circuit will stop. The latter is relaunched via CP24 and CP38.

See the oscillogram below.